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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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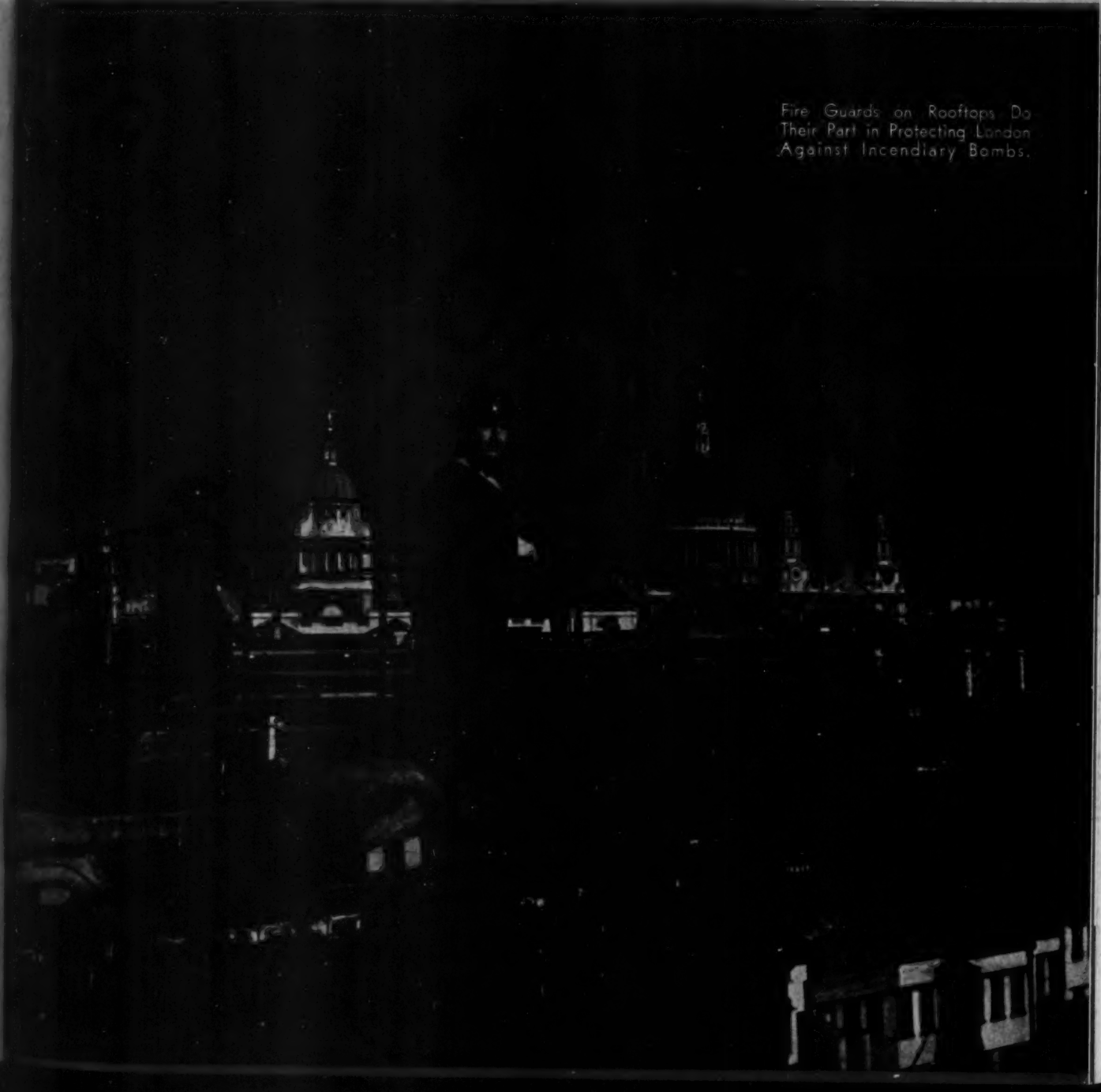
SEPTEMBER, 1942

Vol. 95, No. 9



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FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

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FRED SHEPPERD
Editor
N. N. WOLPERT
Assistant Editor

Today's Hottest Subject

WHILE it is too early to predict results, it is no secret that the Editor of this publication, with a committee of the I.A.F.C., has been working with the Bureau of Governmental Requirements of the War Production Board in an endeavor to loosen up priority restrictions on fire apparatus and equipment.

- The very word "Priorities" has come to mean headache, both for the city official sorely in need of new apparatus and equipment, and for the manufacturer, who has been doing the best he could, despite handicaps, to supply the need.

- This journal has long urged the need of adequate "*protection* for production" — a vital factor in the war effort; and we hope that further progress will be made in bringing about this very necessary correction of a condition that has heretofore made impossible even replacements in defense centers.

The Publishers

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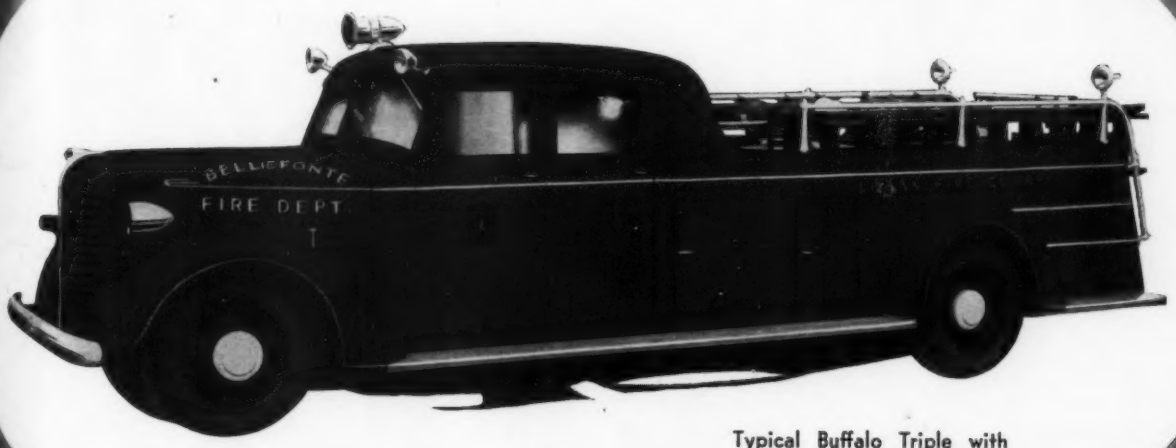

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EFFECTIVE FIRE FIGHTING

with

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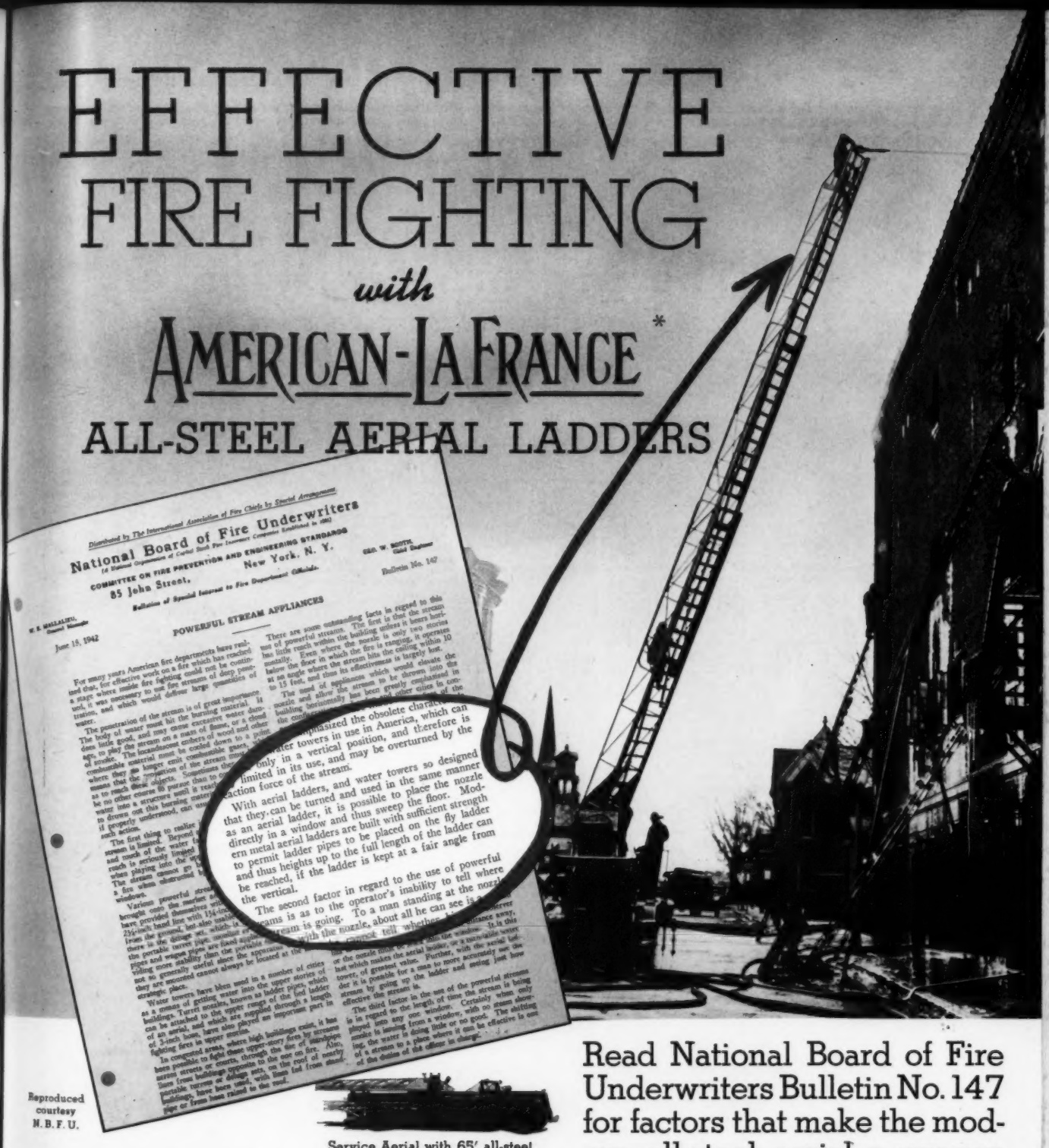
ALL-STEEL AERIAL LADDERS



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National Board of Fire Underwriters

(A National Organization of Capital Stock Fire Insurance Companies Established in 1866)

COMMITTEE ON FIRE PREVENTION AND ENGINEERING STANDARDS
85 John Street, New York, N. Y.

GEO. W. BOOTH, Chief Engineer

Bulletin No. 147

Bulletins of Special Interest to Fire Department Officials.

W. E. MALLALIEU, General Manager

June 15, 1942

POWERFUL STREAM APPLIANCES

For many years American fire departments have realized that, for effective work on a fire which has reached a stage where inside fire fighting could not be continued, it was necessary to use fire streams of deep penetration, and which would deliver large quantities of water.

The penetration of the stream is of great importance. The body of water must hit the burning material. It does little good, and may cause excessive water damage, to play the stream on a mass of wood and other combustible material merely cooled down to a point where they no longer emit combustible gases, or on the incandescent embers of wood and other materials that no longer emit combustible gases, or a cloud of smoke. The incandescent material must be cooled down to a point as to reach these objects. Sometimes the penetration of the stream must be so great that the only means that can be used to reach these objects is to pour water into a structure from above. Sometimes there is no other course to pursue than to drown out this burning material by pouring water into a structure until it is reached and drowned out. Sometimes, even when the fire is properly understood, can ... such action.

The first thing to realize ... stream is limited. Beyond ... reach of the water ... when playing into the ... The stream cannot go ... a fire when obstructed ... windows.

Various powerful streams ... brought onto the market ... have provided themselves with ... 2½-inch hand line with 1¼-inch ... from the ground, but also ... from the deluge set, which is ... there in the portable turret pipe, ... the portable turret pipes and ... pipes are fixed appliances, ... viding more stability than the ... not so generally useful since the ... they are mounted cannot always be located at the ... strategic place.

Water towers have been used in a number of cities ... buildings. Turret nozzles, known as ladder pipes, which ... can be attached to the upper rungs of the fold ladder ... of an aerial, and which are supplied through a length ... of 2-inch hose, have also played an important part in ... fighting fires in upper stories.

In congested areas, where high buildings exist, it has been possible to fight these upper-story fires by streams ... across streets or courts, through the use of standpipe ... lines from buildings opposite to the one on fire. Also, ... portable turrets or deluge sets, on the roof of nearby ... buildings, have been placed, with lines ... pipe or lines from which have been raised to the roof.

There are some outstanding facts in regard to this use of powerful streams. The first is that the stream has little reach within the building unless it bears horizontally. Even where the nozzle is ... the floor in which the fire is ... before the stream hits the ceiling within 10 to 15 feet, and thus its effectiveness is largely lost.

The need of appliances which would elevate the nozzle and allow the stream to be thrown into the building horizontally has been greatly emphasized in ... the conflagrations in other cities in ...

...phasized the obsolete character ... ter towers in use in America, which can ... only in a vertical position, and therefore is ... limited in its use, and may be overturned by the ... action force of the stream.

With aerial ladders, and water towers so designed that they can be turned and used in the same manner as an aerial ladder, it is possible to place the nozzle directly in a window and thus sweep the floor. Modern metal aerial ladders are built with sufficient strength to permit ladder pipes to be placed on the fly ladder and thus heights up to the full length of the ladder can be reached, if the ladder is kept at a fair angle from the vertical.

The second factor in regard to the use of powerful ...ams is as to the operator's inability to tell where ...eam is going. To a man standing at the nozzle ... with the nozzle, about all he can see is ... ...t tell whether ... or the outside line ... that which makes the aerial ladder, or a turret-like tower, of greatest value. Further, with the aerial ladder it is possible for a man to more accurately see the stream by going up the ladder and seeing just how effective the stream is.

The third factor in the use of the powerful streams is in regard to the length of time the stream is being played into any one window. Certainly when only smoke is issuing from a window, with no stream observing, the water is doing little or no good. The shifting of a stream to a place where it can be effective is one of the duties of the officer in charge.

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The Mack Fire Apparatus line includes triple and quadruple pumpers from 200 to 1500 gallon capacity, hose wagons, city service ladder trucks, squad cars—comprising 14 distinct and specialized models. 70 convenient direct factory branches offer a quick, low cost answer to any and all service problems.

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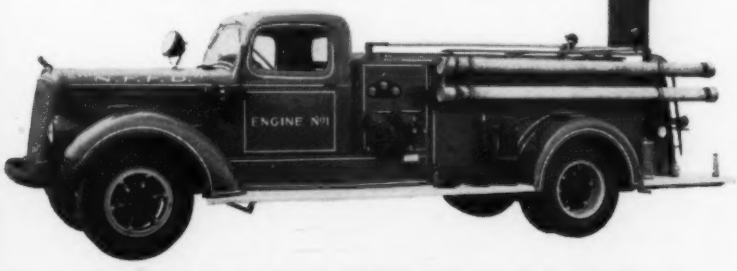

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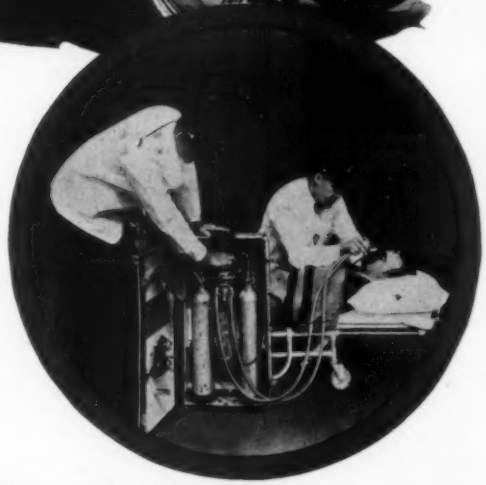

IF a contest were held to pick the best equipped first aid units in the country, there is no doubt that the Civilian Defense Ambulance, operated by the Long Beach, Cal., Fire Department, would be among the prize winners. That's why we are especially proud that this ambulance carries an E & J Resuscitator—one of three being used with great success by the Long Beach Department.

When it is considered that Long Beach has in its midst such large and tremendously important war industries as the Douglas Aircraft Co., California Shipbuilding Co., and Consolidated Steel Co. (all of whom, incidentally, have E & J resuscitation units of their own), there is no wonder that the city saw the need of being prepared for any kind of emergency, and having the best of everything in the way of protective equipment.

Under present war conditions it is mighty important for every community and every defense industry to be ready to save life with artificial respiration. If you believe in having the best equipment available, your only choice is E & J.

Write to any of our distributors, listed below, for further information.

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FIRE ENGINEERING

SEPTEMBER, 1942 VOL. 95. NO. 9

With the Editor

100% for Defense?

During the early part of the first World War, the Editor, then a small arms ammunition inspector at the Ordnance Department in Washington, was asked to explain the elements of the work to a Major who had been commissioned from civil life and assigned to the Ordnance Department.

This officer, whose civil occupation was manufacturing an industrial product far remote from firearms, knew nothing of firearms or ammunition. In fact, he confessed that he had never fired a gun.

After explaining in detail the functioning of arms and ammunition to him, the varous tests and inspections employed by ordnance men on rifle cartridges were outlined.

It was customary, at that time, to give a ten per cent firing test to all machine gun ammunition, that is, one out of every ten cartridges in a lot was fired to make sure of proper functioning of the rest. If the ten per cent worked all right, then it was assumed that the balance were satisfactory.

This was explained to the Major; but he did not agree with this procedure. Asked why, he said that a ten per cent firing test was not, in his opinion, enough.

"What per cent firing test would you recommend," he was asked.

"If I had my way," said he, "I would require a 100 per cent firing test, for I would want to be sure that the best ammunition possible was furnished to our fighters."

The situation at Washington today with respect to materials for war munitions is on a par with a "100 per cent firing test." In their zeal to give war munitions industries every possible pound of critical metals and other materials, well-meaning but misguided Bureaus are making it impossible for cities to replace obsolete and unserviceable fire apparatus. And where such cities have within their borders munitions or other important defense plants, a situation fraught with disaster is being created.

A 100 per cent war effort is all right, but the 100 per cent must include provision for *protection* of production. For if a plant burns down, production ceases. Proper protection against fire means well equipped fire departments, which today are mighty few in number.

It's still not too late for the national government to take steps necessary to strengthen fire departments to a point where they can prevent disastrous fires. All that is needed is to give the order direct to the Bureau of Governmental Requirements to grant low priority numbers to cities having defense industries for purchase of essental fire fighting apparatus and equipment.

Fred Sheppard

How Britain Created National Fire Service

Great Change-Over from Local Control Took Only Thirteen Weeks

By MARGARET WILSON

WAR and the unexpected ferocity of fire bombs have nationalized the fire brigades of Britain. In the first year of bombing the brigades of England and Wales were controlled by no less than 1,400 authorities. In August 1941, those 1,400 brigades passed into State control and were merged into thirty-three fire forces, operating through the twelve Civil Defense Regions under one unified control. London, one of the thirty-three, is sub-divided into five, and there are six further forces in Scotland.

A drastic step, but it had to come. The fire raids, reducing whole streets and great business centers to ashes, showed the dangers in wartime of the old local-control system. Fourteen hundred separate brigades were far too many and most of them were too small. There was no flexibility between them. Reinforcements had to be collected from too many brigades scattered over too wide an area. All had their own methods of fire-fighting. Men of neighboring brigades had never practised together. Muddle was, therefore, inevitable when a big fire in their area brought them together for the first time.

Where Weakness Lay

Lack of unified organization was the trouble, rather than lack of numbers. The fire services had expanded to many times their normal size since the passing of the Fire Brigades Act in July 1938. By last year—and there has been further expansion since—London's fire-fighting personnel and equipment were ten or twelve times bigger than before the war.

Basements of Razed Buildings Are Used as Emergency Water Reservoirs

Until July 1938, no Government department had had any direct responsibility for the fire services. It had been left to local authorities to decide for themselves. Some had brigades, others relied mainly on their neighbors. But the Fire Brigades Act placed all local authorities under an obligation to provide a fire service and the Fire Department at the Home Office saw that that obligation was carried out.

But despite these developments the fire services remained a collection of local brigades. The Home Office Fire Department and the regional technical staffs would have to be strengthened if these brigades were to become a real fighting service. There must be bigger fire-fighting areas, each under an officer with all the fire-fighting resources at his command. The regular brigades and the Auxiliary Fire Service must become one.

How New Force Was Constructed

And so the National Fire Service came into being. One of the new forces might absorb as many as forty-five local brigades. A fire force commander was appointed to each new area. He was given full administrative, executive and operational control of his force, subject to the Regional Commissioner's supervision.

He had to be a man with practical experience of fire-fighting—preferably in war conditions—or of fire-brigade administration. Under him came an officer in command of various formations—divisions, companies and sections, each with its own pumps, crews and special appliances and equipment.

A fire staff officer was posted to each Regional headquarters with a staff to help him supervise the forces under the Regional Commissioner. Staff and technical officers were appointed to look after water supplies, transport-control, communication, stores.

Firemen from un-blitzed areas had been drafted into heavily-raided districts to get practical experience of fire-fighting under wartime condi-

tions. This experience is proving very useful in the training of fire forces in the less vulnerable parts of the country.

A Symbol of Preparedness, the Sand Bag

A standard scheme of mobilization was established. Mobile divisions were created, self-contained in fire-fighting equipment and transport, complete with water-relaying and field-telephone units. They became available to be sent wherever needed, under Regional or inter-Regional direction.

Resources at Commander's Disposal

If any place in a fire force area was attacked, the commander would have under his direct command all the men and the pumps in the whole of that area. Thus the man who fought the fire controlled the resources too.

If he needed foam units, water towers, hose lorries or field telephones they awaited his call, stationed permanently at strategic points near the places most likely to need them. If he needed reinforcements from outside the force the Region would need to summon only two or three other forces instead of risking delay and confusion by sending for a score or two of reinforcing brigades.

Water shortage through the destruction of mains was an obvious danger in any fire raid. Ponds, rivers, canals, swimming pools, industrial water stores had already been surveyed for emergency use. Now, under the new nationalization, plans for extra reserves were rushed through. Manufactured tanks, emergency surface piping, water-tight basements—all came into the new service.

Long-term training plans secure a progressive growth in efficiency. A fire staff college provides simultaneous courses for senior officers, instructors and junior officers. New officer posts are appointed from the A. F. S. as well as the regular service and based on merit. The rates of pay are based on the responsibility of the posts.

What Personnel Are Paid

These are the main minimum rates for whole-time service:

Men: Divisional officer, $2,400 a year; column officer, $2,000; senior company officer, $1,600; company officer, $1,400; section leader; $23.00 a week; leading fireman, $16; fireman, $14; (at the age of twenty or over), $12 (nineteen to twenty), $10 (eighteen to nineteen).

Women: Senior area officer, $1,400 or $1,600 a year (depending on the size of area); group officer, $1,000; assistant group officer, $12 a week; leading firewoman, $10.80; firewoman (eighteen or over), $9.40.

The part-time fire-fighters still have a big place in the new national organization. Men in this category are compensated for lost working time during emergency at a maximum rate of $2.40 a day or $14 a week; women, $1.60 a day or $9.40 a week.

The Fire Service means better opportunities than ever for women. They are employed in driving staff cars, canteens and petrol vans and in telephone and other watchroom duties.

The watch-rooms hardly welcomed them when they first joined the brigades as auxiliaries. The men were suspicious. But they stuck so stoutly to their posts through the heaviest raids that suspicion has changed to admiration. They are accepted as an indispensable part of the organization and are proud to be known as "firewomen."

Few deserve the title more than Mrs. Alicia Perris, of Belgrave Square, London. Before the war she was a housewife. Now she is a section officer and holds the British Empire Medal.

Heroine of London Blitz

She won it in one of the worst East End raids—on the night of the great fire raid on London. She was on duty that night as a mobilizing officer. The school building where she was stationed caught fire, but she refused to leave it until she had rescued as many important documents as possible. By that time even the playground asphalt was on fire.

She went to another station and immediately took over watch-room duties there. That building, too, caught fire and had to be evacuated. She took up watch-room duties at yet another building and worked there all night. Then she returned to her own station—what was left of it—and set about helping to prepare hot meals for exhausted firemen now coming off duty.

There are many heroines like Mrs. Perris in the National Fire Service. Some of them are now being trained as members of mixed pump-crews.

New administrative jobs are also coming their way. The highest belongs to Mrs. Betty Cuthbert, the senior woman staff officer and the

Fire Fighting Ships Demonstrate at a British Port

Up-to-date fire fighting ships have been provided at British ports in order to ensure protection from enemy air raid attacks of merchant ships lying at anchor after long journeys to Britain.

Equipment for British Firemen

Left: This is the armlet (gold lettering on blue ground) to be issued to the Fire Guard. One million, eight hundred thousand have been ordered, as well as one million "patches" for sewing over the existing armlets worn by street fire parties. Right: Fireman wearing the new national fire service cap and breast badge. The number takes the place of the name of the brigade as hitherto.

only women appointed to the National Fire Council. She began as a volunteer driver in 1938. She led a convoy of canteens from London to Portsmouth during one of the big raids there. Today she sits at national headquarters advising on all matters affecting the recruitment and employment of fire women.

A Well Kept Secret

In peacetime it would have taken at least a year to make all these revolutionary changes. In 1941 they took just thirteen weeks. The switch-over from local to State control occurred on Monday, August 18. But Mr. Herbert Morrison, the Minister of Home Security and sponsor of the new service, did not announce it until a month later, for fear the enemy would take advantage of the transition.

It was a gigantic change-over. In those thirteen weeks the whole of the old-fire-brigade law was scrapped, a new Act framed, a new code of discipline, new conditions of service, new rates of remuneration created. The Government had to settle the financial details of taking over local authorities' brigades, buildings and other assets. It became responsible for the whole cost of fire-fighting, less a contribution from the rates.

In those thirteen weeks a new system of control was worked out to provide a new chain of command, plans for headquarters and headquarters staffs, communications systems and the mobilization of reinforcements.

These changes completed, the National Fire Service is today the biggest fire-fighting force in the world. Mr. Morrison gave its strength last September as a quarter of a million men, but it has grown considerably since then.

Firemen and Women Can Be Conscripted

It is a fighting service now, a vital part of Britain's "fourth arm," as Civil Defense is proud to be known. It can conscript firemen as the armed forces conscript sailors, soldiers and airmen.

Men of twenty-five or over may now express a preference for fire-fighting when they register for service. They may repeat that preference at their medical examination. If it is accepted, they are called up in the usual way and told where to report. Conscientious objectors, even under twenty-five, may also express preference for this service.

Single women of twenty to thirty when conscripted for National Service are liable to be directed to the National Fire Service or may express a preference. Married women may volunteer and ask to be posted in their own areas.

Headed by Chief Officer Firebrace

The Commander-in-Chief of this great national force of fire-fighters is Commander A. N. G. Firebrace, C. B. E., R. N. (Retired). Before the war he was chief officer of the London Fire Brigade. Late in 1940 he was seconded to the Home Office. Today he is Chief of Fire Staff and Inspector-in-Chief of the Fire Service.

O. C. D. Advises Jet for Incendiary Bombs

New instructions, calling for a jet instead of a spray in fire bomb fighting, were issued on July 24 by James M. Landis, Director of the Office of Civilian Defense. The instructions came as a result of exhaustive research by technicians of O. C. D. and the Chemical Warfare Service, U. S. Army.

"The new advice differs in three important points from that formerly issued," the O. C. D. director stated. "We now recommend the use of a jet or solid stream of water on the bomb itself, rather than a spray of water; the value of sand for fighting incendiaries is minimized; and speed is urged in attacking the bomb with a jet as soon as it falls, rather than waiting for the thermit reaction to be completed or for a burster charge to go off.

"We fully appreciate the fact that the public has been thoroughly educated to the spray technique, but our experiments and study of recent British experience have made it absolutely necessary to change our thinking in this regard. The jet method is much quicker and more effective. We now know that it will save more lives and more property in the event of a raid. That is the only sound criterion for judging the matter."

It has been found that in the old procedure undue emphasis was placed on the danger of the small magnesium bomb and not enough on the danger of fire, he explained.

"Actually, the fire it starts is more dangerous than the bomb," Director Landis continued. "We found that the quickest and surest way to eliminate the bomb is to strike it with a jet of water. This puts the bomb out of action in less than one minute, so that other fire bombs can be attacked before they can start serious fires."

Reduced to essentials, the new instructions follow:

1. Bring your fire fighting equipment to the scene as soon as the bomb strikes.
2. Shoot a jet of water directly at the bomb without delay, to put it out of action quickly.
3. Then use the jet, quickly, to quench fragments and the remains of the bomb, and any fires it might have started.
4. Be absolutely sure all the fire is out before you leave the scene.
5. Use a coarse spray only where scattering of metal must be avoided.
6. Use sand only if a bomb falls where it is not likely to start a fire or if water is not available.

Chief Olsen Retires

Fire Chief Arthur W. Olsen of the Omaha, Neb., Fire Department retired on June 24th from active duty.

Chief Olsen joined the Department in 1912, going all through the ranks, including inspector, master mechanic, battalion chief and chief since 1934.

The Chief was active in the Nebraska Fire Chiefs Association, the Missouri Valley Association of Fire Chiefs and the International Association of Fire Chiefs, serving in that organization as a member of the Educational Committee.

During his service as Chief, he was the spearhead in bringing many new developments into the Department, namely, the organization of the fire prevention bureau and the arson bureau, first aid and rescue work and officers' training.

Auxiliary Firefighters' Legal Rights

By LEO T. PARKER
Attorney-at-Law, Cincinnati, O.

RECENTLY, many inquiries have been received relative to the rights of auxiliary fire fighters; what protection is usually given these men; what compensation in case of injury; and the responsibility for damage done by them. Therefore, we shall review the late and leading higher court cases on these subjects of law and relevant ones.

First, it is important to know that a municipal corporation in the discharge of its administrative duties, is viewed in law as having two separate capacities. One is private or corporate. Acts done in the performance of a corporate function are termed ministerial or proprietary. The other is governmental or sovereign, in the exercise of which injuries may be inflicted on the person or property of a citizen, without liability on the part of the municipality although such injury may have been the direct result of *gross* negligence on the part of municipal officials and employes.

When municipal officials perform ministerial duties such municipality is liable in damages only where the testimony discloses that such damage resulted from lack of ordinary care or ordinary negligence of the city officials and employes. However, ministerial duties relate to the operation and maintenance of municipal departments, as water works, electric service, sewer facilities, gas supply, public parks and the like, from which a profit may be derived or, at least, for the service of which the municipal charges users or customers. Therefore, since fire departments are operated without direct charges payable by property owners the functions of the departments is purely governmental.

Where Cities Need Not Furnish Protection

In the majority of states the law is well settled that a municipality is under no obligation to provide a fire department in order to protect the property of its residents. When a city provides itself with a fire department it is a governmental function, and it is the recognized rule that the employes in the conduct and operation of the fire department are not the agents and servants of the city, but that they act as officers charged with a public service, for whose negligence no legal suit will lie against the city.

When Cities Are Not Liable

In order that readers may have the opportunity to know the actual circumstances, under which municipalities have been held *not* liable for injuries effected persons and property by fire departments, it is interesting to note that in Traction v. Muncie, 133 N. E. 160 a city was held *not* liable for damages to a vehicle resulting from collision with a fire truck. Also, in Jennings, 123 N. E. 835, a city was held not liable for an injury to a passenger in a vehicle resulting from negligence of the driver of a fire department truck which collided with the vehicle. And, in Bradley, 193 Iowa 1072, a municipality was held not liable for the death of a pedestrian who was struck by a fire engine *returning* from a fire. This latter case is unusually important because this accident occurred while the fire engine was returning from a fire and, therefore, it may have driven slowly and carefully to avoid accidents. However, the higher court held the city not liable. And again, in Mack, 181 N. C. 383, a city was held not liable for loss and destruction of a dwelling although the city failed to furnish an adequate supply of water for extinguishing the fire.

Another interesting case is Barners v. Walb, 262 S. W. 1081, in which the city was held not liable for damages where the testimony proved that a citizen who had business at a fire station house, fell through an unguarded hole in the second floor.

It is important to know that in a few states the higher courts have not agreed to this usual law and have held that a municipality cannot be relieved from liability for injuries *negligently* caused citizens as a result of defective or dangerous fire department property or equipment. For illustration, in Kies, 135 Pa. 144, and also Walters, 36 S. D. 11, Pennsylvania and South Dakota higher courts held that a city is liable for an injury to any person, citizen, or private property, if such injury results from negligent maintenance of a fire department station. These courts held that in the maintenance of a fire station or house the city was performing a ministerial duty and is therefore bound to make the place safe, exactly as other industrial plants and owners of private property. However, this view is unusual and probably will be varied in future years to conform with the higher court decisions of a majority of states which hold municipalities not liable under the identical circumstances.

While we are explaining variations of the usual and ordinary law it is well to know that if a state law specifies that municipalities shall be liable for injuries effected by fire department equipment, the city cannot avoid liability by pleading the governmental function rule. See Maxwell v. Miami, 87 Fla. 107, in which a Florida higher court held a municipality liable for the negligent operation of a fire truck, not withstanding the court admitted that operating fire department equipment is a governmental function.

And a few higher courts have held that although a municipality is not liable for injuries effected by fire department equipment going to a fire yet the city employes are duty bound to use the same degree of care as required of private individuals and firms to protect citizens from injury when coming from a fire. See Opocensky v. So. Omaha, 101 Neb. 336, the leading case involving this point of law.

Notwithstanding the law above explained, it is well settled that when a fire department vehicle is being driven for the personal business of the driver he is expected to use the same degree of care as the drivers of privately owned cars. So held a higher court in the recent case of Swift & Company v. Payne, 134 So. 626. The facts of this case are that a state law provides:

"The driver of a vehicle upon a highway shall yield the right of way

to police and fire department vehicles when the latter are operated upon official business and the drivers thereof sound audible signal by bell, siren or exhaust whistle. . . ."

A member of a municipal department while driving a vehicle to his home to obtain his dinner negligently collided with a motor-truck. The municipal employe sued the owner of the truck for damages on the ground that its driver should have given him the right of way.

It is interesting to observe that the lower court held the owner of the truck not liable and the higher court upheld this verdict, saying:

"It will be conceded that plaintiff was not bound to observe the speed law if any emergency called for greater speed in the performance of his duty. . . . It will be noted upon consideration of the statute and the evidence . . . plaintiff was not performing any official duty requiring unusual speed nor was he relieved of any duty of due care which would have rested upon a private citizen in the same situation."

Compensation Payments

Now, that we have explained the law relative to municipal liabilities for negligence of fire department vehicles, including those operated by regular and auxiliary firemen, we shall review the modern higher court cases having special reference to compensation and pension payments to volunteer or auxiliary firemen. It is important to now that the higher courts have consistently held that a fireman is legally a member of the city fire department so long as he is not discharged or his resignation is not accepted. Therefore, a fireman who for any reason is given an indefinite leave of absence remains a municipal employe and he is entitled to a pension for disability resulting from injuries or sickness. See Simmons v. Pension Commission, 150 Atl. 245. This is so because many states have enacted laws intending to assure payment of compensation to regular and auxiliary municipal firemen who are injured in performance of duties, or to dependents of firemen who unfortunately are killed while in actual service. However, considerable litigation and discussion has arisen from time to time whether, under varied circumstances resulting in injury or death, payment of compensation is justifiable in view of the *wording or formulation* of a particular law.

Therefore, it is important to know that the courts strictly construe the statutes relating to payment of compensation and pensions. This is so because the courts are not permitted to broaden the legal meaning of a law or the original intended meaning of the lawmaking body. This point of the law was thoroughly discussed by a higher court in the recent case of Kotze v. Montclair Police and Firemen's Pension Commission, 157 Atl. 150.

The facts of this case are that in the year 1892 a man named Kotze became a member of Washington Hose Company, No. 3, a volunteer fire company in the town. This company was a voluntary organization, incorporated under authority of a law for the incorporation of fire companies as private organizations. He continued such membership until 1910, when the town passed an ordinance authorizing organization of a call department, by ordinance dated February 28, 1910. In 1911 Kotze was designated as a member of such department and served therein, at a salary, until 1914, when a paid fire department was created, and he became a member and served therein until 1922, when he resigned. From 1914 to 1922 he contributed to the pension fund. In 1920 a state law was enacted which provides, as follows:

"In all municipalities of this State any policeman or fireman, or members of the police or fire departments . . . who shall have honorably served in such police or fire department for a period of twenty years, and attained the age of fifty, shall, upon his own application, be retired on half pay."

In view of the provisions of this law Kotze applied for a pension. The court strictly interpreted the legal meaning of this law and, in holding Kotze *not* entitled to a pension, said:

"Prosecutor (Kotze) insists that his service in the volunteer company and the call company are to be counted in computing his service as a basis for pension. With this contention we are unable to agree. The law relates to paid fire departments of municipalities, and provides that 20 years of service 'in such . . . department' is required as the basis for retirement with pension. We conclude that the service of prosecutor (Kotze) was not sufficient to support his claim for a pension."

Legal Meaning of "Actual Service"

Various courts have held that a duly appointed and active member of a fire department, who is subject to call while off duty during rest hours, is in "actual service." For example, a recent higher court held that although a municipal fireman is killed while "off duty" and while violating the criminal laws of the state, yet his dependents are entitled to the pension provided by the regularly adopted

Baled Rags Make a Tough Fire to Handle

Because of the acrid smoke produced by them, their weight and their tendency to absorb water, baled rags make a dangerous and difficult fire to handle. The buildings in which such businesses are conducted are frequently very old and none too secure, which increases the hazard to the lives of firemen operating on fires therein. The fire pictured above occurred some time ago in Ridgefield Park, N. J. The Fire Department did a very efficient job in bringing it promptly under control.

rules and regulations of a pension board. The latest higher court case involving this phase of the law is Heffernan v. State, 177 N. E. 43, and the facts are that one day an employe in this department went off duty for the day. Afterward he went to a place for the purpose and with intentions of committing a criminal act. He went to this place solely for purposes of his own, entirely disconnected with any service, and he was shot as a result of his conduct, which the testimony showed was not only unlawful but criminal.

His dependents sued to recover a pension on the grounds that the employe was subject to call while off duty and that for this reason he was in actual service when he was killed. In upholding this contention, the court said:

"After careful consideration, we are of the opinion that the trial court was right in holding that said decedent was in actual service. . . . If it had been the intention of those who made said rules to so limit the benefits from said fund, it would have been easy to have used language clearly indicating said intention, such as 'while in the performance of his official duty.' . . . We are not permitted to determine the intention of the framers of the rules by our idea of what the rules ought to be; their intention must be ascertained from a consideration of the language used, in connection with the provisions of the other rules adopted by them."

Substitute Fireman Entitled to Compensation

Numerous courts have held that unless a state statute distinctly specifies that a substitute fireman is not entitled to compensation or a pension, he may recover payment notwithstanding the fact that the board of commissioners endeavors to practice discrimination and refuses to authorize payment.

For example, in State, 41 S. W. (2nd) 842, it was shown that a state law was enacted which provides that the board of trustees may assess each member of municipal fire departments as determined by its rules. It was a matter of option with the board to require the payment of dues from substitutes. The board did not require such firemen substitutes to pay assessments.

A member of a municipal fire department named Edwards had not been regularly appointed a member of the fire department and was not a member of the firemen's pension and retirement funds. Neither had he paid an initiation fee or monthly dues.

While acting in the performance of the regular duties of a fireman, and in the service of the fire department, Edwards sustained fatal injuries. The board of trustees refused to pay a pension to the dependents and the latter filed suit requesting the court to order payment of the same.

During the trial evidence was introduced showing that Edwards had been appointed to the position of substitute in the fire department, and when called, had for several months performed the regular duties of a fireman. He was not permitted to hold any other position and was required to be ready for service at any time.

It was contended by the board of trustees that Edwards' dependents were not entitled to receive the pension because he had failed to contribute to the fund or pay assessments. However, it is important to know that the higher court held Edwards' dependents entitled to receive payment of the pension.

Volunteer Firemen Excluded

Whether volunteer firemen are entitled to recover compensation for injuries depends entirely upon the legal construction and interpretation by the higher courts of valid state laws. It is important to know that state laws are read by the courts in view of interpreting the *intended* meaning of the law making body when the law was enacted.

For instance, in Hartman v. Village of St. Clair Shores, 225 N. W. 493, it was disclosed that a state law provides that firemen who worked "daily" were entitled to a stipulated compensation for injuries.

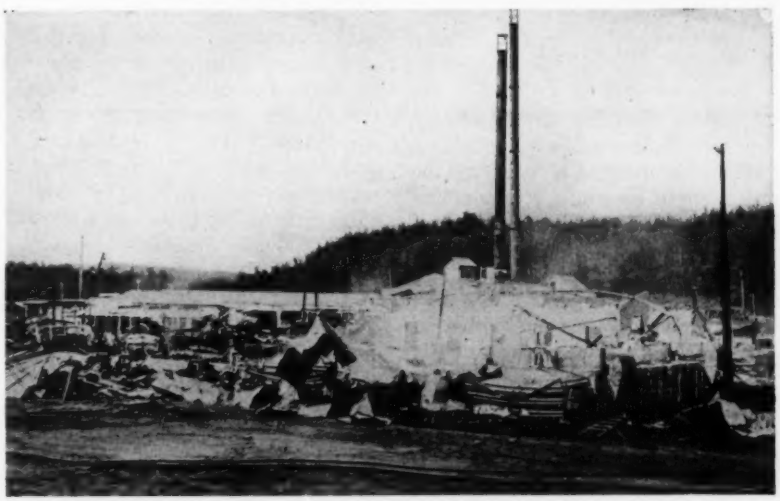
A man named Hartman was a carpenter and was daily engaged at such work in a village. At the same time, he was employed by the village as a volunteer fireman, and he was on the fire department's roll as such. The village had no regular firemen working for daily or weekly pay. In this municipality a volunteer fireman received a specified payment for each fire call, if he was one of the first six to respond.

One night Hartman answered six fire calls and was paid $5 for this service. He was seriously injured when answering the last call and sued to recover compensation under the provisions of a statute which makes the daily wage of a fireman, at the time of the accidental injury, the basis for determining his compensation. He contended that he was entitled to 66⅔ per cent, of his average weekly wage on a basis of $5 a day, the amount he earned on the day of his injury.

However, the court held the fireman not entitled to compensation, under the state statute which did not include him. This court said:

"We pass all questions involved, save one, and that is whether at the time of his injuries the plaintiff (fireman) was receiving a daily wage within the meaning of the statute. . . . The undisputed facts afford no basis for determining a daily wage. The word 'daily' implies more than one day. 'Daily' in the sense that it is used in the statute means day after day; day by day. The plaintiff did not work daily for the defendant (village). He was not paid for time. He was paid by the job. He was paid so much for a fire and, if he did not report on time, he got nothing.

(*Continued on page* 584)



End of World's Largest Plane Wood Veneer Plant

Embers and twisted steel are all that remains of a large part of what was once the world's largest airplane wood veneer plant, owned by the Penoke Veneer Company of Mellen, Wis. The blaze, which was apparently started by a short circuit, caused about a half-million dollars' worth of damage.

Practical Training for Auxiliary Firemen

By FRED SHEPPERD
Editor, FIRE ENGINEERING

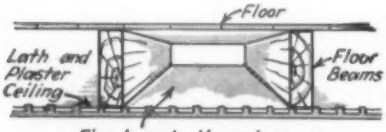
IN this article the fighting of fires caused by incendiary bombs is discussed. Partition, cock loft, elevator shaft and other common types of fires are included.

Q. What is the principal danger in connection with incendiary bombs burning within buildings?

A. Extending the fire throughout the structure.

Q. By what means may fire extend through a building.

A. Through the space formed by a floor and ceiling below; within partitions; back of wainscoting; through attic or cock loft; up and down through vertical shafts, such as dumbwaiter shafts, elevator shafts, hoistways, stairways, light wells, pipe recesses, and other vertical ducts; from window to window on outside of building.



Fire travels through space formed by floor on top, ceiling on bottom and floor beams on either side.

Sketch No. 1

Q. How does fire travel between floor and ceiling below?

A. Horizontal ducts reaching the entire length or width of a building may be formed by a floor, the ceiling below, and floor beams as shown in Sketch 1. These floor beams may range up to twelve inches in depth, and if wood flooring and lath and plaster ceiling are employed, fuel is provided for rapid travel of fire through these channels.

Q. How does fire travel within partitions?

A. Partitions are usually made up of wooden uprights (studs or studding), covered on either side by plaster, plaster board, lumber or other materials. The studding may range from two to six inches in width, which thus gives space between the faces or walls of a partition of like amount.

Fire starting within the partition travels vertically through it. Furthermore, if fire starts in the upper part of a partition, burning embers may drop through the space and start fire at the bottom. Sketch 2 shows a section of partition construction.

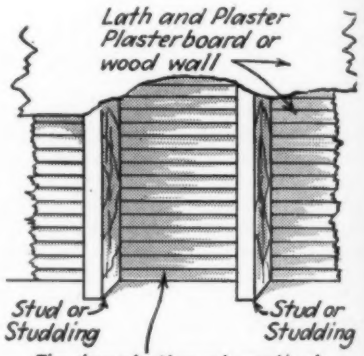
Similar construction is employed in the outside walls of a frame building, with the exception that on the outside there is sheathing, on top of which clapboard, shingles, stucco, or other facing is used. The illustration herewith shows a section of the outside wall of a frame building with clapboards removed. Here the position of the vertical members, the studding, is clearly illustrated.

Q. How does fire travel back of wainscoting?

A. Wainscoting is a wood paneling on interior walls, usually extending three to four feet up from the floor. It takes the place of plaster or other wall finish over the area covered by the wainscoting. Fire travels behind wainscoting in very much the same way as it travels behind plaster, or plaster board, partitions. In addition, if the wainscoting is not fastened tightly to the studding, fire may travel horizontally between wainscoting and studding so that it will be travelling both vertically and horizontally.

Q. What is a cock loft?

A. See Sketch No. 3. A cock loft is a blind space extending over a building between the roof and ceiling of the top floor. In flat roof buildings, the cock loft slants to the rear and the height of the cock loft in some of the buildings may be four or five feet at the front while at the rear of the building it may be one foot or less. In some structures the dumbwaiter opens up in the cock loft, as do other shafts. Because of the low headroom, the cock loft is rarely used for storage of materials.


Lath and Plaster
Plasterboard or wood wall
Stud or Studding
Stud or Studding
Fire travels through vertical duct formed by two walls separated by studs

Sketch No. 2

Q. How does fire travel through a cock loft?

A. Fire may rise to the cock loft either through partitions, outer walls, or shafts. Once fire enters the cock loft, it travels in all directions. In some cases, where a number of buildings are semi-detached, they have a common cock loft extending the entire length of the row. Dividing wall between the various buildings may be extended up through the cock loft, but frequently that portion in the cock loft is not tight, and fire can find its way through the cock loft above one building to that over the next building. In addition, fire may leave the cock loft and enter the space behind the cornice, traveling the length of the building through this channel.

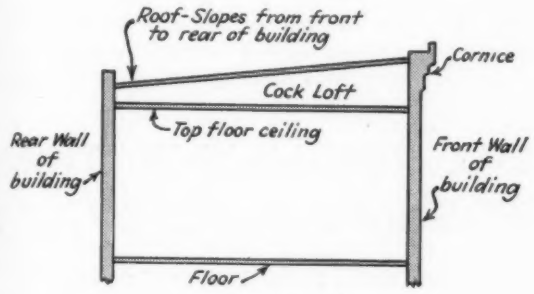
Q. Can fire travel down as well as up through a vertical shaft?

A. Yes. Embers may drop through such shaft carrying fire downward, while fire normally burns upward through the shaft.

Q. What precaution is necessary on the part of fire fighters

when operating on fire involving a vertical shaft in upper parts of building?

A. One precaution to take is to make sure that fire does not drop down the shaft and develop that point, possibly cutting off the escape of the men in the upper part of the building.



Sketch No. 3

Q. Why are dumbwaiter shafts particularly dangerous?

A. They are dangerous because they are usually of inflammable construction, and open up on various floors as well as into the cock loft. Fire starting in the neighborhood of the shaft may enter the shaft, and rise to the top thereof, entering the cock loft and spreading over the entire structure.

Q. How does fire travel from window to window on the outside of a building?

A. Fire which has gained headway on the floor of a building may sweep out, and the flames, rising from the face of a building, may crack the glass of the windows above. This means fire may enter the floors above the fire floor. The illustration herewith shows an example of fire extending from window to windows above on the face of a building.

Q. Can fire pass through a brick or masonry wall between adjoining buildings if there is no door or other such openings therein?

A. Yes. If the basements have a common wall, and if wood beams are employed, it is possible for fire to travel through such wall. When beams of adjacent buildings come together end to end, fire may involve one beam and when this beam has been charred, the fire may reach the beam of the adjoining building. Or the beams may not be set tightly in the common wall. In this case, fire may pass through the wall around the beam.

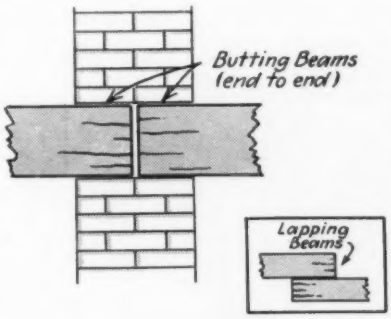
If the ends of the beams lap, there is the possibility of fire getting past them, particularly after one beam has become involved and has shrunk from the effect of fire. Sketch 4 illustrates the placement of beams in the common wall.

Q. Are pipes installed in a building ever responsible for carrying fire through a floor?

A. Yes.

Q. How does such extension of fire occur?

A. Either by fire passing through spaces around the pipes, or by heating the pipes and carrying the fire to floor above by conduction. The holes for many pipes are not accurately made, and the space between the pipe and the surrounding floor may not be covered. In this case it is an easy matter for fire to go through the floor alongside the pipe and reach combustible materials on the floor above. Where a pipe carries heat by conduction, fire on one floor may heat the pipe to a high temperature and this heat is transmitted along the pipe by conduction. Combustible materials in contact with the pipe on the floor above may be ignited by the heat so conducted.



Sketch No. 4

Q. In operating on a fire, what is one of the first things the officer in charge must do?

A. Make sure fire is not extending through concealed passageways either vertically or horizontally. If this point is not taken into consideration, the fireman may discover, after the initial fire is out, that fires are burning on upper floors or in other sections of the building due to fire having traveled through concealed passageways to these other locations.

Clapboarding Removed, Showing Studding, and Vertical Channels Through Which Fire May Travel

Q. How can you tell when fire is burning within a partition?

A. By discoloration of the paint on paper, by blistering of paint, or by the surface heat. Placing the hand on the partition will usually determine whether or not fire is burning within, for the higher temperature of the point at which fire is burning is readily detectable by this means.

Q. If such concealed fire is indicated, what should be done?

A. Open up the wall, and look for evidence of fire being present or having passed the point. In opening up, cut the lath and plaster away between the studs between which the fire is located. Do not tear the lath off studding as this makes a larger hole than is necessary and causes unnecessary damage. When opening up, if there is evidence of fire having been in the partition, make an opening sufficiently large so that lath or studs showing no exposure to fire are encountered. Sometimes the presence of cobwebs will offer sufficient assurance that fire has not passed any particular point in a partition. If such cobwebs are found, it is a proof that they have not been exposed to fire.

Q. When fire has involved a

shaft in a building, what precautions should be taken?

A. In case of fire in a shaft or around the same, make a quick examination of all rooms leading to the shaft, to make sure that fire has not left the shaft and entered the rooms. In case of fire in a shaft that has a covering on top, have this covering removed as quickly as possible. The greatest hazard in connection with all shaft fires is when there is connection with them and the cellar and cock loft. This is particularly true in connection with a dumbwaiter shaft.

An Example of Fire Travelling Upward from Window to Window on Outside of Building

Q. Where fire has burned through openings around pipes, what precautions should be taken?

A. If fire has burned around pipe holes or tubes or small openings, openings should be made in the ceiling or floor around them and an examination made of concealed places, as fire will often follow pipes and tubes for a considerable distance. Furthermore, fire passing through a floor at a pipe may travel horizontally between the floor and the ceiling below.

Q. If fire has been burning around the roof of a building, what attention should be given to the cornice?

A. Always be sure to open up the cornice, as the fire may have mushroomed against the under side of the roof, entered the cornice and followed it to an adjoining building, or may be burning several feet away without showing any sign of fire until you open the cornice.

Q. If fire occurs in the cellar of a building equipped with hot air heating system, what precautionary measures should be taken during the fire?

A. In the case of a fire in a cellar which has a hot air heating system, examine the heater pipes and the floor and wall registers on all floors as the fire may have traveled up through the heating pipes to various rooms in the building.

Q. In general, what precautionary steps should be taken after a fire in a building has been extinguished and before returning to quarters?

A. Examine the floors above and below that on which the fire occurred; feel around the walls and around pipes and shaft openings and make sure that there is no concealed fire, so that there will be no chance of fire extending further, or rekindling.

NEW O. C. D. RECOMMENDATIONS START JET-SPRAY CONTROVERSY

Reversal of Previous Instructions Leaves Fire Department and Auxiliaries' Instructors Out on a Limb

By James J. Deasy
Battalion Chief (Retired), New York Fire Department

RECENT suggestions released from official sources indicate that the use of jet for control of fires started by incendiary bombs is a better method than the former recommended practice of using a spray on the burning bomb.

The word "jet" is rather broad; it may indicate a small solid stream or, as our English cousins consider it, a solid stream regardless of the stream diameter. The advised use of a solid stream regardless of its size should be qualified and its adaptability distinctly outlined.

It is conceded that an incendiary bombing attack is usually accompanied by a barrage of high explosives, this to rupture water mains or possibly reservoirs and other sources of supply, thereby creating a water and pressure drop. Whether or not water supplies are so adversely affected, it is known that a severe drain on water supplies will be created by the demands of the fire department operating at large fires. The hazard of inadequacy of pressure and supply for use by civilians in the control of the innumerable number of small fires that they are expected to control is thereby brought about. The use of hundreds of small streams will adversely affect the supply required by the fire department at the larger fires.

Increased Water Losses from Solid Streams

Another factor is the tremendously increased water losses that are caused by solid streams when used on bombs and the fires they start. The writer believes that the suggested use of jets should be qualified in a more distinct manner, i. e., where water supply is adequate, where close approach to the bomb is denied and where use of garden hose and other forms of water application are not present and resort must be made to the use of water based materials such as soda-acid, foam, etc. The above, plus pack pumps, pressure pumps, etc., have their limitations of duration of application and consequently conservation of their contents must be considered. For instance, the duration of a solid stream from a soda-acid extinguisher is approximately one minute. It is debatable whether any incendiary bomb or the fires it may start can be controlled in one minute with any degree of certainty; again the need of water conservation.

The use of a solid stream always brings with it the hazard of scattering the burning magnesium and igniting combustible materials distant from the spot where the bomb had ended and the chance that, regardless of what nozzle pressure is available, the stream could not get to the inaccessible points where the fires have started.

Approach Not Always Possible

Where a garret or under-roof area is affected by the landing of a bomb, it is not always possible for the householder to gain close-up approach to the point where water is to be employed. The use of a solid stream on the bomb in such a restricted area without adequate means of ventilation brings the possibility of explosion due to the rapidity of ignition and the gaseous releases that accompany the use of a jet or solid stream on burning magnesium.

Unquestionably, if it is possible to employ a solid stream, under the favorable circumstances outlined, then such method of control is advisable, but the features of water conservation, lessening of water losses, reduction of explosive possibilities must be considered favorable to the spray application.

This brings into the picture the suggested dunking of the bomb. That sounds all right in theory, but when one can make the close approach that is necessary in order to pick up the bomb on a shovel or similar device, why wouldn't it be possible to throw it out of the win-

dow or carry it to some safe place in a metal pail with its bottom covered with sand or on a specially constructed shovel covered with asbestos or similar material?

But to return to the advisability of using water jets instead of spray on bombs, there are altogether too many unqualified recommendations made. The public are confused and lose faith in the recommended practices because of the constantly changing suggestions relative to the control of incendiary bombs.

Unquestionably a solid stream will control and extinguish a fire started by an incendiary bomb, provided that methods of control are effected immediately after the bomb lands. In fact, sufficient water applied to any bomb will assure its extinguishment. Of course, this latter statement indicates that sufficient water may mean a great amount.

The public has purchased various recommended devices for spray or solid stream application of water. They are now advised to procure some form, mechanical or otherwise, for using a solid stream. Let's stop these constantly changing orders and suggestions and get down to some fundamental method that will be efficient and adaptable. If it is necessary, qualify the circumstances under which spray or solid streams are to be used, but prevent further confusion by adopting standard recommendations. It is true that as various methods are tried, changes may have to be made.

To sum up the discussion, water supplies are the basis on which incendiary fires are to be fought, for it has been admitted that innumerable fires will be in order when and if we are subjected to an incendiary bombing attack.

Conservation of Water Vital

Conservation of water is extremely vital under these conditions, for water losses are also a factor. Spray will not create the foregoing adverse features that a solid stream will produce; the hazards of injury to operators of a spray is certainly not as great as when a solid stream is used on burning magnesium, especially if employed close to the bomb.

Solid streams are certainly advisable when a number of bombs have landed and have become ignited in a restricted area, or where bombs have landed on a paved or dirt highways. The writer is of the opinion, however, that where a bomb is resting on a paved highway, or any highway for that matter, the best thing to do is to let it burn itself out, and save the water that would be used for other and more hazardous situations.

Some theorist has advanced the idea that it is essential that bombs landing on highways be extinguished as rapidly as possible to prevent their flare from acting as beacons for the airmen. This is ridiculous, for it is certain that when bombs have landed on highways, they have also landed on houses and started fires there, thus giving the light necessary for direction of the contents of bomb racks on planes. Unless a bomb landing on a highway is close to combustible materials, the writer's belief is that it should be allowed to burn itself out.

All in all, jet application has its place in bomb fires, but certainly the use of spray should not be overlooked when circumstances are favorable for its use.

$200,000 CIRCUS FIRE KILLS THIRTY-NINE WILD ANIMALS

Worst Circus Fire In Recent Years Was Incendiary in Character

By William H. Wallace

FIRE struck suddenly on August 4th, and swiftly swept through the menagerie tent and cages of the Ringling Brothers-Barnum and Bailey Circus staging a four-day stand on Cleveland's lakefront. By the time the flames had done their work, thirty-nine wild animals were dead, and circus officials estimated the loss approached $200,000.

The fire started shortly before noon in bales of straw and hay and quickly spread through animal cages and across the menagerie tent, which burned with explosive velocity, dropping flaming fragments across the entire area covered by the tent. Sawdust and straw fed the flames, trapping animals in their cages, where many perished, or were so badly burned that they were shot by police and Coast-Guardsmen at the request of the circus veterinarian. The animal victims included: thirteen camels, six of which had to be shot to end their suffering; eight zebras; four lions, three of which had to be shot; two pongrus; two tigers; two giraffes; two gnus; one puma, dispatched by bullets; three deer; and two elephants, which were also shot by submachine-gun fire.

The fire was marked by many instances of personal heroism on the part of circus attendants who dashed into the flaming tent to save their charges, release trapped animals, or drive others from the flaming area. A number of elephants, horses and camels were tethered within the tent at the time, and veteran handlers were quick to free the elephants and horses before they could stampede and trample spectators. The horses were driven out and rounded up by circus workers in a vacant lot on East Ninth Street, while the elephants were corralled in a corner of the circus lot. Circus tractor operators were quick to respond and worked fearlessly to snake animals from the inferno to safety, then return for more. Most of the gay wagons, designed by Norman Bel Geddes, were reduced to blackened ruins, and many of the animals in them were roasted alive, scorched or suffocated. Piles of hay and mounds of sawdust continued to smolder as the roustabouts corralled animals roaming about, their hides and skins a mass of scorched and bleeding flesh. Many of them were held or tied down until police could free them from their suffering with rifle shots and submachine-gun fire.

Almost before the fire was out, trainers were seen spraying animals with saline solutions, or painting their scorched hides with foille, a new remedy for industrial burns. Seven gallons were used at the scene, and fifteen gallons more were rushed from New York by air to treat the wounds of the other burned animals.

The fire itself lasted only about twenty minutes and two downtown fire companies and one high pressure company of the Cleveland Fire Department responded to the alarm.

Circus Fire Leaves Death in Its Wake

A line of dead and badly charred camels mark the scene of the fire which destroyed the menagerie tent of the Ringling Brothers-Barnum and Bailey Circus. Many valuable animals perished as a result of the blaze.

One of the most remarkable things about the happening was the demonstration by the circus of its famed discipline, organization and steadiness in a crisis. All hands pitched in and helped put out the fire, administered to the suffering animals, then removed the carcasses of the dead animals, carted away the rubble, and by the time the evening performance started, right on schedule, almost all evidence of the tragedy had disappeared.

The fire, while not the worst in the circus history, was the most serious in recent years. In 1916, fire consumed the horse tent and 84 horses in five minutes. A few years before that, most of the Ringling railroad cars were burned in a Cleveland lakefront siding, but fortunately they were empty at the time. Again in 1910, flames destroyed the big top and most of the circus at Schenectady, but fortunately, again, not a single human life was lost.

Following a general radio alarm broadcast by the Cleveland Police, the Pittsburgh Police next day picked up a sixteen-year-old negro boy who admitted that he and a companion started the menagerie fire by tossing lighted cigarette butts into piles of straw in revenge for having been fired earlier in the day from their jobs as circus hands.

Friendship Fire Association Participates in Blackout Test

There was an exciting finish to a meeting of the Friendship Fire Association, fire buffs of Washington, D. C., recently when a surprise blackout test alarm was sounded. All belong to the Auxiliary Fire Service and though the meeting was being held at the home of Edward B. Sonneborn, in the Wardman Park section, within ten minutes' time seven members attached to Engine Company No. 1 had reported for duty at the quarters of the company about two miles away.

Engine 1, first due at the White House carrying the keys to the White House gates, had responded to stand-by at the Executive Mansion on the "yellow." Accordingly, Dr. Edward R. Gookin, Chief of the FFA, took charge of Engine 1's quarters detailing Auxiliary Fireman Roy A. Wiseman to the desk where within a very short time eleven more auxiliary firemen reported, as did Dr. J. P. Lyons with an ambulance from a local hospital and two nurses, four Red Cross nurses, and a casualty shock team of four members from the American Women's Volunteer Society, all of whom Auxiliary Fireman Wiseman duly registered in addition to keeping track of incoming alarms.

When the "all clear" was sounded and Engine 1 returned from the White House, Dr. Gookin reported to Captain Harper the duties performed by the auxiliaries during the latter's absence.

In the meantime, members of the Friendship Fire Association not detailed to Engine 1, but attached to Engine 28, Engine 9 and other companies had lost no time reporting to their various stations. The surprise test proved, as others have previously demonstrated, that however widely scattered these firemen of the National Capital happen to be, it doesn't take them long to get to their accustomed places when the sirens sound.

ROBERT D. HEINL.

VOLUNTEERS MAN NEW YORK'S FIRE COMMUNICATIONS SERVICE

Men and Women Being Trained as Telephone Operators to Serve During War Emergencies

By Jerry Daly

THE New York Fire Department is training hundreds of men and women as volunteer telephone operators. The voluntary service of additional hundreds is needed for training and experience in how to handle telephone communications in three fire alarm emergency central offices which have been established in three strategic parts of the city.

This wartime auxiliary communicating service is an adjunct to the regular fire telegraph system which has a central station in each of the five boroughs of the city. To date there are about 1000 women and 500 men enlisted—many of them city department employees, but a substantial number are in private employ, or with sufficient leisure time on their hands.

Trained by Fire Department

The training of these volunteers is being carried on by the Fire Department's own Telegraph Bureau of which Valentine Fendrich is Chief Engineer. He is assisted by a staff of electrical engineers and fire telegraph dispatchers who constitute a board of consultants or strategists.

For the past two months, Fire Telegraph Dispatcher Frank C. Walsh has been teaching and drilling hundreds of volunteers whose applications, together with finger prints and photographs have been cleared by police and other investigating agencies. Mr. Walsh is a former Signalman, U. S. Navy, World War No. 1, with fourteen months foreign service. He has been in the Fire Department as telephone operator and dispatcher since 1921. The training of the volunteer telephone operators is done at a secret point downtown near the Municipal Building. Each volunteer agrees to serve at least four hours a week. The first group was schooled to be supervisors. Later they taught others who will be the regular operators. Many if not most of the volunteers have had switchboard experience, but their work in the emergency fire alarm communications service will not entail any switchboard operation.

The volunteers have the choice of serving any four consecutive hours of the week which may be convenient for themselves. They are trained in serenity and precision and are coached in initiative and poise under stress of excitement. In the three emergency telephone fire alarm central offices (location is a military secret) one for Manhattan and Bronx in combination, another for Brooklyn and Queens in combination and one for Staten Island, there is a plant of reserve telephone equipment for the handling of any overload in Fire Department telephone traffic at the regular fire telegraph central alarm stations in the event of an air raid. In these emergency telephone central offices, there is additional reserve telephone equipment for emergency fire telephone dispatching just in case any of the existing fire telegraph stations is rendered inoperative by the enemy.

Each of the three emergency telephone central offices has a bank of individual telephones for incoming calls, such as those which come from air raid wardens, police or fire officials or other public functionaries. This is the receiving side of the emergency office. The sending side also has a bank of individual telephone lines. Each telephone

Photo by Bill Herries

Auxiliary Firemen of the Ninth Battalion, New York

On Saturday, August 1, graduate members of the New York City Auxiliary Fire Department received their regulation steel helmets which they wore during a parade past the City Hall, where city officials and Mayor LaGuardia reviewed them. As soon as the parade was over this group of fire auxiliaries went directly to their fire house for the approbation of their superior officers, Battalion Chief William Ryan (left) and Lieutenant Cook (right).

instrument, on both sides of the plant, is in a soundproof stall. These stalls are mounted on long tables of desk height. All telephone bells are eliminated, but the clapper is softened to a light dull hum. Located between the incoming and the outgoing banks of telephones is a filter desk or "clearing house" which is augmented by a map to the side and on which is shown the location of all fire alarm street boxes in the area covered by the emergency office. A card rack of the "IN" and "OUT" type, with one card for each piece or unit of fire apparatus in the territory, is conveniently located on the other side of the filter table.

When cleared through the filter table, the call or telephone alarm is then handled by experienced fire alarm telegraph dispatchers who will select the particular fire apparatus units available to respond. They will determine which other apparatus units shall be called, either to respond or to fill or to relocate. The telephone operators at their respective desks or stalls will function as conveyors of information only. They will not make decisions as to apparatus responses or the movement of covering companies.

Two Telephones in Each Station

Everyone of the 350 New York City firehouses or fireboat stations now has two additional telephones which are independent of the regular telephone extension to the fire alarm telegraph central switchboard. The numbers of these two additional telephone lines are not in sequence and purposely so since one of them is for emergency incoming traffic and the other is for emergency outgoing traffic. They were installed in anticipation of any condition which might arise in the event the regular central office is bombed or is so saturated with traffic during an air raid as to be practically useless for more than the normal business of the department. The numbers of these new telephones are not to be disclosed to the public, but have been made known to the members of the department and to the operators in the fire telephone emergency central offices.

Printed forms for every possible purpose that could be anticipated have been provided in the emergency fire alarm telephone offices. The initial form is that which will be used for receipt of information. It provides for location of fire, between what streets or avenues; the originating telephone number and identity of the sender of the call; the character of the fire; time and date received; box number assigned; fire company that responded; name of the telephone operator who received the call; name of the operator who sent the call to the engine house, etc., etc. Other similar forms run along lines familiar to fire fighters in cities and communities that have such methods today.

The regular fire alarm telegraph dispatchers in the New York Department are now doing two extra eight-hour tours of duty a week, without extra pay, so that each of the five central alarm stations will have a double crew on the midnight to 8 A. M. watch. These reserve dispatchers are held over from their 4 P. M. to midnight trick. They put in sixteen hours straight, two nights a week. Army cots are provided for the reserve crew, but who can sleep in a fire alarm station in any large city!

New York has a Fire Telegraph Auxiliary Corps composed of city employees and others in private employ who have a yen for the work. These men are augmenting the regular staffs as a purely voluntary service and some of them are actually receiving and transmitting box alarms and functioning generally as fire alarm telegraph dispatchers. Regular staff dispatchers are relieved from doing extra hours or reserve duty when and if an auxiliary dispatcher is on hand to substitute. But the midnight to 8 A. M. hours are the big problem. Some auxiliary dispatchers can work the early morning trick. Some others cannot because they have jobs to go to that day.

CONDUCTIVITY OF DISCHARGE FROM CARBON DIOXIDE EXTINGUISHERS*

Underwriters Laboratories Make Tests to Determine Safety of These Extinguishers Around High Tension Electrical Equipment

THE purpose of this investigation was to determine the electrical conductivity of gas and snow discharged from first aid carbon dioxide extinguishers when used in the presence of high voltage electrical equipment.

The method adopted was to set up a fifteen-pound extinguisher in the secondary circuit of an alternating-current step-up transformer assembly, discharging the gas and snow across an adjustable gap or air space against a copper target connected in the same circuit. With varying voltages applied between the extinguisher and the target any increase in current would be recorded on a meter provided for the purpose, and streamers, sparks, or arcovers would be noted.

In the tests in which the horns were made conductive by means of a wire contacting the extinguisher and extending to the discharge end of the horn, and with the horn coated with melted frost produced by condensation of atmospheric moisture on the chilled horn, several bluish streamers were noted between the end of the horn and target at a potential of 60,000 v. The maximum meter deflection was 0.20 ma, which, after subtracting the tare value, represented an increase in current flow of 0.07 ma over the normal standby condition.

Under operating conditions, that is, with the extinguisher discharging snow from a dry horn against a target, no increase in current passing the gap was noted.

At 80,000 v. potential and with the horn in the normal condition (no wire from the extinguisher to the open end of the horn) the current passing the gap increased to a maximum of 2 ma, but after the atmospheric moisture was permitted to accumulate on the nozzle, the current flow increased to a maximum of 4 ma.

Tests at a 90,000-v. potential showed that after operation (horn frosted) rather heavy streamers were noted bridging the gap from the horn to the

*From Bulletin of Research No. 26, published by Underwriters' Laboratories, Inc., Chicago, Ill., July, 1942.

Cleaning Fluid Makes Hot Fire at Los Angeles

When 6,000 gallons of cleaning fluid became ignited at the Pacific Chemical Company Plant, at Los Angeles, Calif., recently, it developed into the fire shown above. Fifteen fire companies were required to subdue the blaze.

Former Chief Hazard Celebrates Ninety-Third Birthday

Former Fire Chief Lucien D. Hazard of Pittsfield, Mass., celebrated his ninety-third birthday on August 15 at the home of his daughter, Mrs. Clifford C. Harris, of Springfield, Mass., shown with him in the picture. In very good health, with an excellent appetite and still taking his daily walks, Chief Hazard is still keenly interested in every thing as he nears the century mark. He was born in Herkimer, N. Y., in 1849, entered the Pittsfield Fire Department at the age of fourteen as a call boy, and after rounding out fifty years of continuous service retired thirty-one years ago as chief.

target. Under operating conditions, even with the snow packing up slightly in the gap between the horn and target, the current flow was but 2.0 ma. Tests made after moisture accumulated on the surfaces of the horn showed heavy streamers bridging the gap and a flashover occurred at 80,000 v, at which time the meter indicated a current flow of 18 ma, or 16 ma over the original tare reading.

Tests Made

Current flow through the gap did not increase under operating conditions and the increases which were noted are believed to be RF current.

Under moist horn conditions a flashover took place at 85,000-v potential between the horn and target held ¾ inch distant, and the horn was carbonized.

A new horn was substituted for the one whose insulating properties had broken down. Under the same conditions no arcover was obtained up to 100,000 v potential. Tests under operating conditions, including the ejection of both snow and gas, showed no change. This suggests that the condition of the horns of these extinguishers is important. Old, dirty, or carbonized horns may serve as conductors.

By making the horn a conductor with a wire extending from the extinguisher to the discharge end of the horn, it was found that 100,000-v potential could be maintained across a 10-inch gap without flashover. Operating the extinguisher under this condition showed no flashover. Reduction of the gap to 9¾ inches produced an arcover at 100,000 v, but no arcing occurred upon a reduction to 99,000-v potential.

Under a condition in which the arcing took place (9½-inch gap, 100,000 v), the addition of snow caused the arcing to cease and an increase of the potential to 103,000 v was necessary to re-establish the flashover. Under conditions in which 25 flashes occurred in 25 sec, arcing was definitely extinguished by the snow and did not re-occur until the potential was increased to 110,000 v. While the extinguisher was ejecting gas, the arc condition was re-established at a potential of 108,000 v.

Conclusions

The presence of CO_2 snow or gas as discharged from a first aid fire extinguisher does not decrease the dielectric quality of an air gap or clearance space between live conductors, indicating that CO_2 snow and gas themselves are nonconductive.

Safe use of these extinguishers at close range will require an appraisal of the condition of the horn. Broken down, dirty or wet horns may serve as conductors and thereby make the use of these extinguishers hazardous near high potential conductors. While the data indicate that a gap of 10 inches from the end of a conductive nozzle may be safe when operating in the presence of a potential of 100,000 v, such a close approach is not recommended nor is it essential for effective use of the extinguisher.

The condition of the horns as judged from the data presented is an important factor in their dielectric values. Service conditions as well as some forms of usage will materially reduce their value as an insulator between the operator and conductors. Operation of the extinguisher results in lowering the temperature of the horn, and this will permit atmospheric moisture to collect as frost on the surface. Continuous operation does not permit the melting of the atmospheric frost and consequently no hazard is presented. A delayed second or third operation of the extinguisher introduces the moisture coating by melting of the atmospheric frost and in this way even a clean normal horn may become hazardous if used unduly close to live conductors.

Accumulations of dirt on the surfaces of horns obviously may lower their dielectric value, and removal of dirt and crusts with solutions or abrasives will be apt to weaken their insulation seriously.

There may be conditions of occupancy and use which will dictate replacement of horns at relatively frequent periods to maintain their dielectric strength and safety. Replacement should be practiced rather than cleaning used horns by persons unskilled in the matter of dielectric values.

Recommendations

In view of the variations likely to be encountered in service, no recommendations are made other than the following:

(1) Keep the extinguisher equipment in a clean, dry location.

(2) Replace horns rather than attempt major cleaning operations.

(3) In using the extinguishers in fighting electrical fires, play safe, do not approach high potential conductors closer than necessary. While a clearance of 10 inches may be adequate, it may not be possible to estimate this distance accurately in practice. Attack from a distance of 20 to 30 inches is safer.

Transits for Detecting the Location of Fires

The Defense Council of the City of Paterson, N. J., recently put into operation a new fire detection system devised by a member of the council's advisory committee, James M. Dunn.

At seven locations, six within the city and one without, there have been set up transits which, during a blackout, can be used to establish compass bearings of a fire or other incident. These seven transits have been permanently established on the top of strategic buildings. The base of the transit is made up of a piece of tempered pressed wood, twenty-four inches in diameter. It is divided on the periphery into segments of five degrees. An indicator at the base provides for quick and accurate reading.

The watcher looks through the telescope of the transit, sights his objective, takes his reading and reports by direct phone to Control Center. At least three watchers will be in a position to sight the objective and establish the compass bearings. These readings, when telephoned to the Control Center, will be located on the master map.

On the master map there have been entered the location of transits, together with a circle for each, carrying the fifteen degree numbered divisions that are on the base of the transit. The master map and the transits have been oriented for true north by the city engineer.

In the case of a fire or other disaster the point of intersection that results from the bearings given enable the officials at Control Center to locate the spot involved immediately.

It is anticipated that this innovation will be of great value at the time of total blackout. In addition it will be serviceable in cases of attempted sabotage at spots not easily discernable by fire watchers or wardens.

Searchlight Wagon Aids in Rescue

A San Francisco, Calif., Fire Department searchlight wagon recently aided in the rescue by the Coast Guard of the crew of a small Navy patrol craft which ran aground off the famed Seal Rocks in a late evening fog.

The hammering of machine gun fire and the flash of rockets and flares from the breakers near the Cliff House gave some residents of the city's Richmond district some bad moments. They thought the Japs were trying to land.

The machine gun fire and the flares came from an 83-foot craft which became lost in the swirling mists off Lands End. The guns were fired in order to attract attention, for the fog was so thick that the flares could not be seen at any great distance.

Luckily, the distress signals were recognized by the Coast Guard which rescued three officers and ten men from the craft after the arrival of the searchlight wagon.

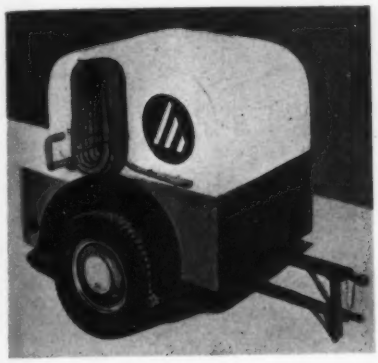
Ensign W. B. Sims of Moberly, Mo., in charge of the ship, said that the pea-soup fog, plus the confusing braying of numerous foghorns made navigation impossible. A breeches buoy was used in the rescue.

A soldier on sentry duty nearby called for the guard when he saw the flares and the shooting started. "I thought, 'Oh boy, this is it.'" he later said.

BOB GREENOCK.

Auxiliary Water Purifier Serves as Fire Fighting Apparatus

A completely self-contained, trailer type water purification unit that serves as emergency fire fighting apparatus has been developed by the Technicraft Engineering Company, 5610 South Soto Street, Los Angeles, California. The unit, called the Sterozone Hydrovan, makes use of ozone to literally burn bacteria out of contaminated water and deliver clear, pure, sparkling, tasteless, odorless, colorless water for drinking and domestic purposes in areas where water supplies are damaged or destroyed.



The Sterozone Hydrovan Serves Double Duty as a Water Purifier and Fire Fighting Unit

The trailer assembly can be taken anywhere a car can be driven. The effective range is about 500 feet from water source to fire.

The Hydrovan is turned into a high pressure fire fighting engine by a simple clutch to cut out the Sterozone purification unit and deliver water at 200 pounds pressure through the 2½" hose. In areas where the water pipe line system has been destroyed, pressure is naturally cut off from the mains and water for drinking and fire fighting must be taken from open storage tanks, swimming pools and other emergency storage.

The unit is mounted on a two-wheeled trailer and can be taken anywhere a car can be driven. Equipped with 50 feet of 4½" intake hose and 400 feet of 2½" fire fighting hose, the Hydrovan permits operation over nearly a 500 foot range from water storage to fire location. The enclosed gasoline engine drives the electric generator and the fire pump. Water can be purified at the rate of 20 gallons per minute or delivered through the fire hose at 200 gallons per minute.

New London Prepared for Emergency

In preparation for any emergency, the fire department of New London, Connecticut, under the direction of Chief Thomas H. Shipman is becoming greatly strengthened.

The latest additions to the department include a 750 gallon Ward LaFrance pumper and a 65-foot Seagrave junior aerial.

The Ward LaFrance pumper is powered with a motor of 180 horsepower and is capable of pumping 750 gallons per minute at a pump pressure of 150 pounds. It has two cabs, capable of seating at least seven men. The driver's cab is reached by the ordinary left and right hand doors, while the second cab is directly behind this and is reached through a runway between rows of hose.

The ladders are carried on top of the apparatus, and include a 20-foot extension ladder, a ten-foot roof ladder and a folding ladder.

The apparatus carries two lengths of hard suction on one side, while a rack on the other side accommodates 5 pump tanks. It has a 110-gallon booster tank with 150 feet of hose. The body of the truck is capable of holding 1,000 feet of 2½" hose and 200 feet of 1½" hose.

The second piece of apparatus to arrive in the city within a week was a new 65-foot Seagrave Junior aerial.

The truck has an overall length of 39½ feet and fully equipped weighs approximately 21,000 pounds. It has two enclosed cabs capable of accommodating at least seven men.

It has a 12-cylinder motor capable of a minimum horsepower of 185.

The ladder is mounted on a turntable which is operated through a hydraulic oil pump system, and the ladder itself is lowered and raised by another hydraulic pump. The system is a one-man affair.

The auxiliary equipment consists of one 50-foot extension ladder, two 35-foot extensions, a 16-foot inside extension, one 25-foot wall ladder, one 16- and one 14-foot roof ladder, a 10-foot folding ladder and two 12-foot scaling ladders.

Other equipment includes a cellar pipe, life belts, a 10- and 20-ton jack, gas masks, crow bars, door openers, hose clamps, life net, six salvage covers, and numerous pieces of necessary equipment.

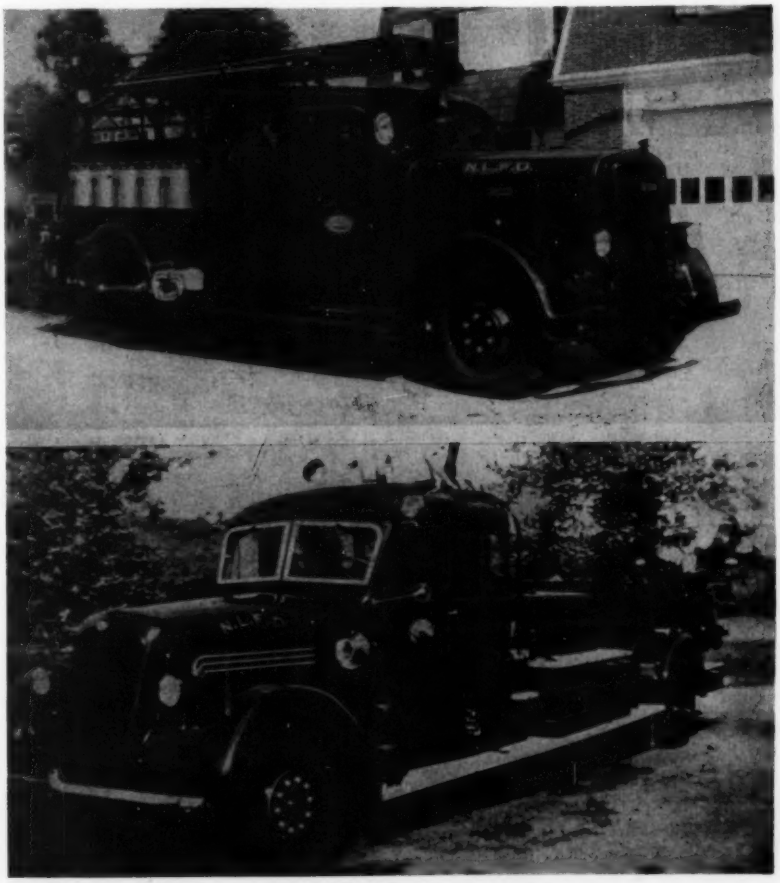
After a series of road tests under his direction, Chief Shipman recommended to the City Council that the apparatus be accepted. The Council acted on his recommendation and the apparatus was placed in service, being assigned to the F. L. Allen Hook and Ladder Co. No. 1. Thirty-two minutes after being placed into service the apparatus rolled to its first alarm, an $8,000-rooming-house blaze.

Both pieces of old apparatus that were replaced will be held in reserve for use by the auxiliary department.

WILLIAM C. PECK

Chief Leeds Retires

Fire Chief Joseph H. Leeds, who has served the Atlantic City, N. J., Fire Department for thirty-five years retired on September 1. Chief Leeds, who is retiring because of failing health, has served in that position for thirteen years.



New London's New Fire Apparatus

Upper: The Ward LaFrance Pumper purchased recently. Lower: The 65-foot Seagrave junior aerial put in service a week later.

Correspondence

Twenty-Five Years as Chief

To the Editor:

Chief D. A. Davis recently rounded out his twenty-fifth year as Chief of the Evanston, Wyo., Fire Department and was presented with a beautiful gold watch appropriately engraved, by the members of the department. He was installed as Chief on June 6, 1917.

He has been with the department through the old cart days on through to the motorized equipment. He has had five years in a row with 100 per cent attendance at fires by members, and for a period of almost fifteen years has had an attendance of over ninety-five per cent of the members.

He has had the honor of having fire losses as low as five cents per capita, placing well up in the rating in fire prevention activities for the nation and winning first place in 1941 for cities of its size.

Chief Davis has put many long hard hours of work in for the good of the department and has seen it blossom to one of the best departments in the country. By way of proof, it might be said that Evanston enjoys the lowest insurance rate in the state, shared only by one other town which has a paid department.

This month Chief Davis saw added to the equipment of the department a brand new Chief's car which will serve also as an emergency and first aid car.

Yours very truly,
BUCK SIMPSON, Captain,
Evanston, Wyo., Fire Department.

Fire House and Truck of the Newellton Fire Department

Activities of Newellton Fire Department

To the Editor:

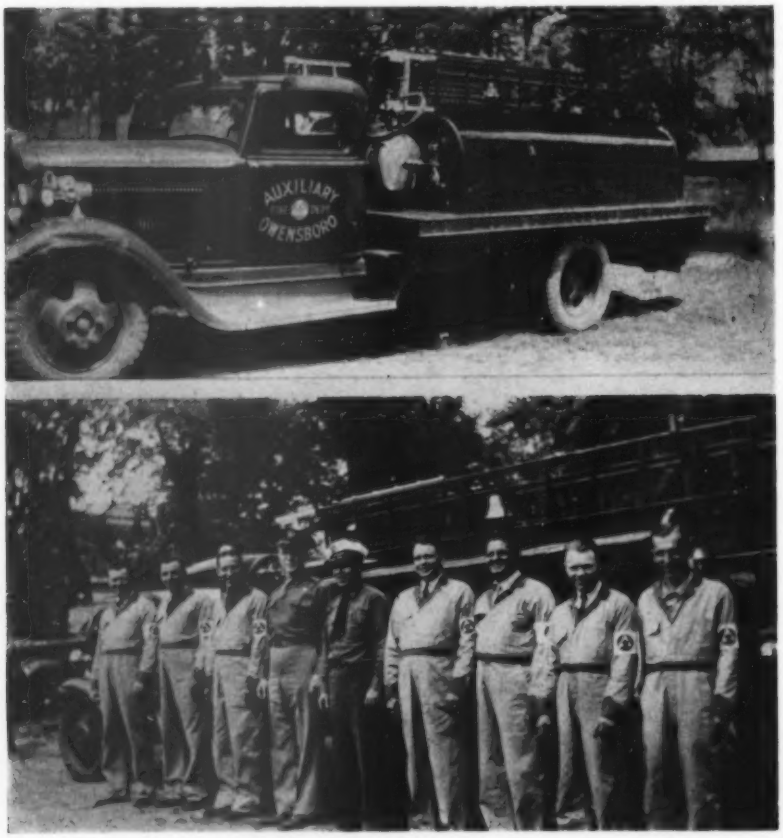
Our department of thirty-six members is entirely volunteer. None of the men, including myself, are paid men.

We answer all town and parish calls with a truck which was given to Newellton and Tensar Parish in 1938 by the American Legion.

A state fire school is held here every year and we try to have one man attend the school in Baton Rouge each year.

As a volunteer department, we have a very high rating in the state.

Yours truly,
W. M. TATUM, Chief
Newellton, La., Fire Department



Equipment and Personnel of Owensboro's Auxiliary Fire Department

Owensboro's Auxiliary Firemen

To the Editor:

Here are two pictures which I think every fire department would be interested in. They show just what a real live auxiliary fire department can do.

This is the auxiliary group at Owensboro, Ky., who have completed a full firemen's training course under the direction of Drillmaster Cecil Iglehart. This is the same course that the regular firemen must take. All of the men have taken the full Red Cross first aid course; some of them taking the instructors' training.

The truck is one the men built themselves, using a 1½-ton platform truck and salvaging parts from the fire department shops and other places. It is equipped with a front end pump and 1,000 feet of 2½-inch hose with 200 feet of leader line, a twenty-four foot extension and a twelve-foot roof ladder.

The head of this group is Roy A. LeBaron, foreman of the gas company, who recently attended the annual firemen's school held in Lexington, Ky.

Yours very truly,
V. A. BEAM, Teacher-Coordinator,
Firemen's Training in Kentucky.

Surplus of Carbon Tetrachloride Eases Restrictions on Use

A temporary surplus of carbon tetrachloride for which storage facilities are inadequate resulted in easing of restrictions on its use. The Director General for Operations issued Amendment No. 1 to Order M-41, which doubles the quantity certain users may consume between now and September 30th.

Fire Prevention Week

The week of October 4-10 has been designated by President Franklin D. Roosevelt as Fire Prevention week. In his proclamation, the President called upon the nation for observance of this occasion as a part of the war effort and charged the U. S. Office of Civilian Defense, which is responsible for civil protection in wartime, to assume leadership in the observance.

Fire is always serious, but now, as the President pointed out in his proclamation, every loss of life, every interference with production, every loss of critical materials delays victory. Fire Prevention Week affords an opportunity to impress all the people with the present urgency of protecting our resources against destruction by fire.

Cooperating with the Office of Civilian Defense in the observance of Fire Prevention Week are the Chamber of Commerce of the United States, the Federation of Mutual Fire Insurance Companies, the International Association of Fire Chiefs, the International Association of Fire Fighters, the National Board of Fire Underwriters, the National Bureau for Industrial Protection, the National Fire Protection Association, the National Safety Council and the United States Junior Chamber of Commerce.

Bulletin on Static Electricity Issued

Sparks caused by charges of static electricity constitute a fire and explosion hazard in a wide variety of industries, according to the Department of Commerce.

Circular C438, just released by the National Bureau of Standards, describes, partly in non-technical language, the nature and origin of such static charges.

The purpose of the circular is to give a general outline of the various ways in which manifestations of static electricity introduce appreciable hazards into many industries, and to present, in convenient form, a quantitative basis on which engineers can develop such safety measures as may be required. Various methods used for mitigating the hazard are listed and the possibilities and limitations of these methods discussed.

Copies of Circular C438 may be obtained from the Superintendent of Documents, Washington, D. C., at ten cents each.

A New Activity for the Fire Department

Firemen have answered calls since time immemorial to rescue cats from trees and dogs from rivers but it remained for the members of the Burrville, Conn., Fire Department to establish a new precedent on August 14 when it responded to a call to rescue a cow marooned in a cesspool.

The cow had broken through the wood plank covering of the pool at the Henry Barry farm. After looking over the situation the firemen extricated the animal with the aid of a block and tackle. After the rescue one of the fire commissioners came close to losing his happy home. It was not until he changed his clothes in the cellar that his wife consented to allow him to enter the house.

THOMAS F. MAGNER

Manufacturers' Announcements

Kerotest Receives "M" Pennant

The Kerotest Manufacturing Company of Pittsburgh, Pa., was presented with the U. S. Maritime Commission "M" Pennant and Victory Fleet Flag at formal presentation ceremonies at the plant on August 29.

Turntables for Air Raid Signals

Air raid requirements of large densely populated areas have made necessary the installation of stationary signals. Certain areas, however, have developed dead spots where the warning cannot be heard clearly.

This problem has been met by the Speedway Manufacturing Company, 1834 South 52 Avenue, Cicero, Ill., by mounting the warning horns on their Speedway Electric Turntables. Coming in sizes to handle all weights up to 500 pounds, they are provided with back gearing to give them as few revolutions per minute as desired.

When used with "all-electric" systems, the horns take their power from collector rings that are installed on the round tops of the turntables. Such horns or sirens are usually revolved in one direction through a complete circle of 360 degrees.

New Crash Trucks Guard Willow Run

A new-type all-purpose fire truck has been produced by Walter Kidde & Company to guard hangars and test fields at the new Ford Willow Run bomber plant. Equipped with carbon dioxide, foam and water, the new truck is able to cope with any kind of blaze from ordinary rubbish fires to those taking place in oil, gasoline, flammable paints and electric equipment.

Extinguishing apparatus on these crash trucks includes ten 100-pound cylinders of carbon dioxide under pressure to 850 pounds per square inch at 76 degrees, a 200-gallon per minute water pump with suction hoses for use with outside supply and a self-contained water tank holding 250 gallons; and a foam generator and twelve 50-pound pails of foam powder. The carbon diovide cylinders are connected to a 150-foot hose mounted on a trunion type wheel and equipped with horn, nozzle and shut-off valve assembly.

Additional equipment includes two portable carbon dioxide units, two antifreeze units, axes, crowbars, wrecking bars, searchlights and extension ladders.

New Chemical Flameproofs Protective Clothing

An entirely new range of protective work clothing and accessories made possible by a chemical capable of flameproofing textiles is aiding greatly in guarding against industrial burns.

Gloves, cover-alls, helmets, aprons for workers exposed to the danger of flying sparks, air raid warden and aviators' outfits—all fashioned out of cloth that will not fiame—are replacing, in many instances, leather and asbestos protective apparel.

Manufactured by the E. I. Du Point de Nemours & Company, Wilmington, Del., is the first and only commercial-scale plant of its kind in the world, the chemical newcomer is known as ammonium sulfamate. Clothing rendered nonflammable is not altered in appearance or texture.

Not only is the new type safety equipment, which is made out of fabric resembling terry-cloth, more economical and less awkward than orthodox protective materials, but employees are more efficient because of increased comfort under conditions where temperatures are often high.

Willow Run's New Crash Truck

• • IS A WAR OF MEN AND MACHINES, TOO

INCENDIARIES . . . sabotage . . . air-raids . . . the hazards of high speed industrial production . . . these are but a few of the added burdens fire-fighting authorities must contend with in time of war, and defense against the ever-present menace of fire assumes even greater importance and magnitude.

Trained fire-fighters and the most modern of fire-fighting equipment are indispensable to cope with the problem. A recent survey shows that among cities of 20,000 or over, 365 of this number reported that 51.9 per cent of their pumpers and ladder trucks (five in every ten) were over fifteen years old. Men on the fire-front need a full complement of mechanized equipment as much as men on the military front—need particularly the greater speed with safety . . . the superior "going power" of FWD four-wheel-drive apparatus to get to the fire faster and wipe it out before it reaches big-area proportions.

And, just as the superior performance of the four-wheel-drive principle is recognized by its use in practically every wheeled motor vehicle in the military services today, FWD apparatus is increasingly preferred to meet the added responsibilities of wartime fire-fighting.

FWD

FOUR WHEEL DRIVE FIRE APPARATUS

*BUILT BY THE OLDEST AND LARGEST FOUR-WHEEL-DRIVE TRUCK MANUFACTURER . . .

FWD APPARATUS ANSWERS TODAY'S NEED FOR *SPEED . . POWER . . TRACTION . . SAFETY*

in Fire-Fighting Equipment

An FWD is a unit scientifically built and balanced for fire service—its true application of the four-wheel-drive principle provides plus-performance factors which count heavily in wartime fire-fighting . . . power on all four wheels makes full use of all the engine power for acceleration or holding the pace on steep grades . . . with every wheel a "live puller" there is added traction — added safety to negotiate wet, slippery pavements, debris or mud-clogged areas . . . positive drive control at high speed is a distinct advantage of FWD design which converts all the weight of the truck and its load into powered traction.

Designed in its entirety for fire-fighting, the FWD truck is balanced and coordinated in every detail—far away and beyond any standard truck "adapted" to this service.

Available in a complete line — all types, all sizes — with rotary or centrifugal pumpers in triple or quadruple combinations in capacities of 500, 750, 1000 and 1250 — backed by nation-wide service facilities.

Write for complete information.

THE FOUR WHEEL DRIVE AUTO CO., Clintonville, Wisconsin
Canadian Factory: **Kitchener, Ontario**

FWD Model KHR triple combination pumper owned by the Village of Western Springs, Illinois. The two stage centrifugal pump has a capacity of 750 gallons a minute. The truck is painted in white enamel which makes the truck more conspicuous on the street, especially at night. The truck carries 1200 feet of 2½ inch double jacketed hose and 300 feet of 1½ inch hose in addition to a 16-foot and 28-foot roof and extension ladders. Both ladders are mounted in the enclosed compartment on the side of the body. The truck is also equipped with a 150-gallon booster tank.

THESE FWD MEN SPECIALIZE IN FIRE APPARATUS

. B. DODGE — Chief Engineer. Senior to any other man in the world in four-wheel-drive truck engineering experience, Dodge has been with FWD for almost twenty-five years.

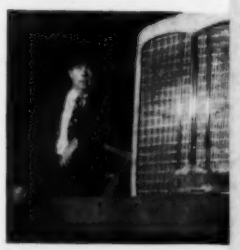
His experience and knowledge have been reflected in the unfailing dependability of FWD fire fighters in operation throughout the world.

LEO C. POLZIN, Manager of FWD's Wisconsin Sales Division — a seasoned fire truck man. Began with FWD in the Inspection Department 18 yrs. ago, "worked his way up the ladder" and in 1933 was promoted to his present position.

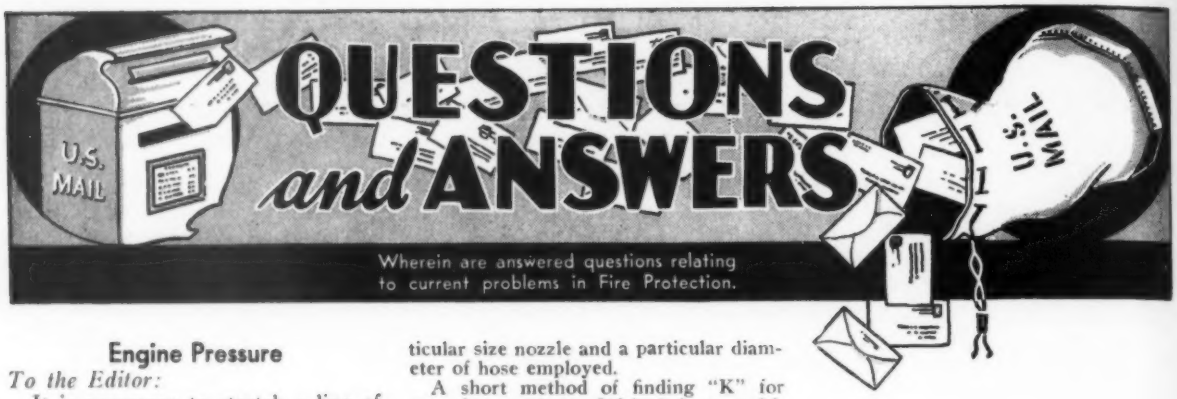
As a Sales Division Manager, Polzin has had a great deal of experience in the fire truck field.

C. B. WILLIAMS — "head man" of production in the FWD factory. A fire fighter for twenty-five years — as Assistant Fire Chief of the City of Clintonville Volunteer Fire Department.

Williams has been with FWD for thirty-one years. Last year he was largely responsible for trebling FWD's production.



FWD FOUR-WHEEL-DRIVE FIRE APPARATUS FOR WARTIME FIRE-FIGHTING



Engine Pressure

To the Editor:

It is necessary to stretch a line of 500 feet of 2½-inch hose from a pumper at the base of a hill to the fire on the hill; the grade of which is 35 degrees. The nozzle to be used is 1⅛-inch, with a nozzle pressure of 40 pounds desired. What must the pressure be at the pumper?

H. H.

Answer: A grade of 35 degrees means seventy feet of vertical rise for every 100 feet measured horizontally.

A grade of 35 per cent, however, means thirty-five feet vertical rise for every 100 feet horizontally.

As the per cent rather than the degree is used in stating grades, we presume that 35 per cent grade is what you had in mind.

In solving problems involving engine pressure where the grade is given in per cent, the problem is solved as if the line is laid horizontally and then a correction is made for the back pressure represented by the elevation of the nozzle above the level of the pump.

For a 35 per cent grade, this correction, or addition, would be $35 \times .434$, or 15.19 pounds at the engine for every 100 foot horizontally the nozzle is distant from the engine, or $28.665 \times .434 = 12.44$ pounds for each 100 foot of hose laid up the elevation.

Thus if 1,000 feet of hose were stretched up a 35 per cent grade, the back pressure would be 124.4 pounds.

To solve the problem you give:

$$\text{E.P.} = \text{N.P.} \times (1.1 + \text{KL})$$
$$= 40 \times (1.1 + .167 \times 10)$$
$$= 40 \times 2.77 = 110.8 \text{ lbs.}$$

Add to this pressure, the back-pressure, which is $5 \times 12.44 = 62.2$ lbs. $110.8 + 62.2 = 173.0$ pounds, which is the desired Engine Pressure.

Explanation of "K"

To the Editor:

What is the meaning of "K" as used in problems involving nozzle and engine pressures?

H. J.

Answer: "K" is a symbol which represents a figure which must be used in the formula to give results which tally with experimental figures.

The value of "K" is found by using the engine pressure formula and substituting in the formula experimental or test values of engine pressure, nozzle pressure and length of line. Then the value of "K" is determined for a particular size nozzle and a particular diameter of hose employed.

A short method of finding "K" for any size nozzle on 2½-inch is to multiply the nozzle diameter by itself three times (that is, $d \times d \times d \times D$) and divide the results so found by 10. The answer is an approximate value of "K."

But there is no explanation of this symbol. It is merely a figure used to make results secured from the formula tally with actual test, or experimental, figures.

Pressure Needed to Open Clapper Valve

To the Editor:

Water in a 4-inch standpipe exerts 100 pounds pressure at the siamese connection. At what pressure will water in a 3-inch line, connected to the siamese, open the clapper valve?

U. B.

Answer: If the pressure at the siamese outlet is 100 pounds per square inch, it would require from approximately 102 to 105 pounds per square inch in the 3-inch hose line at the siamese to open the clapper valve.

It all depends how tight the clapper valve is, or how stiffiy it operates.

Theoretically, a fraction of a pound greater than 100 pounds pressure in the standpipe would be all that would be required to crack the valve. Practically, however, it requires a little more than this, and from 102 to 105 pounds should be sufficient.

Hazards of Chromic Acid, Etc.

To the Editor:

I would appreciate receiving some information on the following:

What are the hazards connected with chromic or chromatic acid? In storage and use about a plant, what will be the action in fire?

What are the dangers, if any, in the use of cyanide, where it is used in the process of casting brass?

What controlling qualities has the use of cement on magnesium bombs?

Has salt any value in the extinguishment or control of magnesium fires?

J. L. M.

Answer: Chromic acid is an oxidizing material, and will ignite on contact with acetic acid or on contact with water. As it is poisonous, great care should be used in handling it.

At fires, it should be isolated, if possible, for upon exposure to fire, it may cause explosion.

Cyanide of potassium is always dangerous, due to the gas it throws off, a deadly gas.

It is not inflammable, but evolves hydrocyanic acid on contact with acid or moisture. This acid is flammable and forms explosive mixtures with air. A few breaths of the hydrocyanic acid gas may cause death.

Cement has not been used on magnesium bombs, and none of the literature from Great Britain describes its use for this purpose. Apparently it is not as effective as other commonly procured materials used in controlling magnesium incendiary bombs.

Cement, after it has set, actually expedites the burning, due to the release of the water in crystallization when heated by the burning magnesium.

Salt has about the same effect in extinguishing magnesium bombs as has fine sand. It has a disadvantage in that it does not make an air-tight cover for the magnesium, and thus does not extinguish the fire by smothering.

"K" for Fog Nozzle

To the Editor:

What is the value of "K" for a fog nozzle?

I can figure engine and nozzle pressure and also friction loss by using factors for regular size tips, but am at a loss as to how I may find the values of "K" for fog nozzles on 2½-inch, 1½-inch and booster lines; also on 2½-inch line branched into two 1½-inch lines equipped with two fog nozzles.

D. W. G.

Answer: The average of "K" for a 2½-inch fog nozzle is .0316.

The average value of "K" for a 1½-inch fog nozzle is .069.

We are unable to give you the value of "K" for a booster line, not knowing the diameter of this line.

Where a problem is being solved, employing a single line of 2½-inch hose branched into two 1½-inch lines, each equipped with a 1½-inch fog nozzle, we believe the simplest solution to this problem would be to convert the 2½-inch single line into two parallel lines of 2½-inch hose.

This is done by multiplying the

length of 2½-inch by 3.6. The results thus secured will be the length of each of two 2½-inch lines, equivalent to the single 2½-inch.

Then each of the 2½-inch lines so secured should be changed to 1½-inch by multiplying by the factor .074. The results so secured should be added to the length of 1½-inch line in each branch line. This will give us two lines of 1½-inch hose, each equipped with 1½-inch nozzle.

One of the lines may be solved, and the answer secured from this solution will be the answer of the other also.

Flash Points

To the Editor:

What are the flash points of the following liquids: ether, alcohol, benzine, whiskey, naphtha, gasoline, kerosene and fuel oil?

Answer: The flash points of the various liquids you give are listed below. It should be noted, however, that many of them vary, depending upon the chemical composition of the liquid. For example, whiskey, alcohol, benzine, naphtha, gasoline and kerosene all have a varying chemical composition. However, where a figure is given, it is considered a fair average value for the flash point:

Ethyl ether	—49 degrees F.
Alcohol (grain)	55 degrees F.
Alcohol (wood)	52 degrees F.
Benzine	0 degrees F. (or less)
Whiskey	82 degrees F.
Naphtha (petroleum)	80 degrees F.
Gasoline	—45 degrees F.
Kerosene	100 to 165 degrees F.
Fuel Oil No. 1	100 to 165 degrees F.

Fuller's Earth as Bomb Extinguisher

To the Editor:

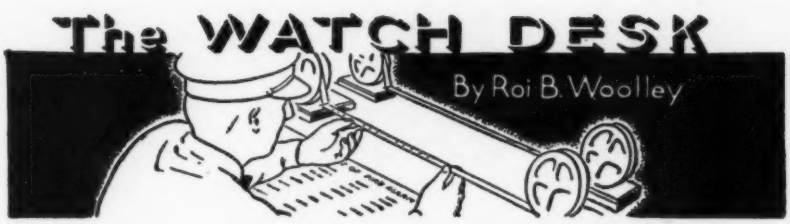
What is the value of fullers earth as an extinguisher of incendiary bombs? D. G. K.

Answer: Fullers earth has been used with some success in controlling incendiary bombs.

Recently the Bureau of Mines also announced feldspar as a very suitable material for controlling incendiary bombs.

However, with all of the granular material such as sand, feldspar, fullers earth, etc., there is still the problem of extinguishing the fire caused by the bomb. The bomb itself can be controlled by these materials, but where other materials around the bomb are afire, such as flooring, furniture, etc., these solids are not suitable for handling such fires.

It is likely that hard, flaked coal-tar pitch is the most effective of any of the solids for handling the bomb fire itself. This pitch does extinguish the bomb, and arrests combustion a few seconds after it is applied. Most granular materials, which do not form an air-tight covering, permit the bomb to burn slowly while it is covered over, and are therefore really not extinguishers of the bomb.



Our inquiring reporter overhauls the firemanic news of the day

Much Ado About Nothing

John Daley hails from Roxbury (Mass.) or did. He has—or had—a patent cigarette lighter. One day it wouldn't work. Empty. So Daley loaded it with benzine and got it working again—so well in fact that it took six pieces of fire apparatus to put it out—along with the fire that resulted when the benzine overflowed and ignited. Damage $10. Rumor hath it that Mr. Daley now fills his lighter out in the "wide open spaces."

* * *

Hot Off the Tape

While his men were wetting down a fire in a foto studio on West 40th Street, New York City, Batt. Chief George E. Bryant and his driver saw an auto burst into flames nearby. They grabbed extinguishers off of Eng. 65 (which seems to get itself into a lot of writeups don't it!) and doused the blaze. . . . Belated thanks to J.W.C. (of Beverly Farms, Mass.) for suggesting that our boss extend our Watch Desk page to two pages. . . . Birds were blamed for a fire which damaged roof-and-attic of dwelling in Des Moines (Iowa). Firemen found remains of several birds' nests in attic and believed "Oily substances in nests may have started the fire by spontaneous combusion". . . . Mascot Wm. Doscher, Jr. aged 7 of Hose Co. No. 2 Larchmont Fire Dept. and son of Capt. "Bill" Doscher, proudly sports a special badge on his red parade Hose Co. shirt. The number is "½". . . . Fireman Andrew Stafford, Waterbury (Ct.) F.D., had the unique experience of responding to an alarm of fire from his own home. . . . Some of the Westchester (N. Y.) County Brothers are a bit jealous of their Greenville (N. Y.) pals over the way the latter's equipment sports chrome-plating. They say even the hydrant wrenches and axes are all finished in gleaming chrome. . . . Odd coincidents (?); there was that barn fire on farm of Wm. H. Decker near Middletown (N. Y.); what was odd about it was the fact that this was the fourth barn to burn. The first was a century-old structure which went in 1926. Two more were destroyed within six years. This fourth fire caused $10,000 loss. . . . The Brothers of Fairmont (W. Va.) left Central Station on a "rush call" to a "burning house". They left the "fire ground" on a bigger rush. Seems the smoke came from a wasps' nest that was being destroyed. . . . Speaking of queer coincidences, fire started one day in office of Cyrus Kurtz, a dentist of Paterson (N. J.) who was vacationing at the time in Havana. As the alarm was being sent out, another was received for a fire—of all places—in Kurtz's empty house. . . . Did we ever tell you about the four firemen of Chicopee (Mass.) who went out to fight a brush fire and got lost in the woods? After an hour of wandering around they finally found a route and tramped over 3 miles back to the fire trucks burdened with heavy equipment and with the thermometer at 80 degrees. . . . The Braves of North Adams (Mass.) weren't discouraged when their truck broke down while on route to a fire. They just commandeered a taxi and hopped in with an extinguisher and said "to the fire, James!" What's more—"James" took 'em home, later. . . Waltham (Mass.) fought grass fire garbed in Tuxedos. The alarm called them from their formal banquet being given to Retired Chief G. L. Johnson. . . . Believe it or not, H. W. Burnhouse is a veteran member of the Milwaukee (Wis.) Fire Department, says one of our New England newshawks. . . . Two hawks broke even in an aerial fight—but as death settled the argument the birds disrupted electric service and started a serious grass fire. This was near Spokane (Wash.). The two birds with claws locked together fell over a high tension line, short circuiting power circuits; when they fell from the wire in flames they ignited the dried grass. . . . Out in Twin Falls (Idaho), F. G. Prescott pulled his refuse truck to the curb when he heard sirens. The Braves pulled up alongside. *"Where's the fire"*, he asked?—*"Right here—it's you!"* they replied and went to work. . . . The Waltham (Mass.) Senior High School band, practicing at the North Junior High School, that city was so wrapped up in their music (?) they never knew the building was afire.

* * *

Page Mr. Ripley!

The 'Ripley' of the month goes to Contrib' Wm. C. Peck, New London, Conn., whose little newsoddity has to do with Allen Hook & Ladder Co. No. 1 of that city. According to Brother Peck, *"just 32 minutes after being placed in service, the new apparatus (of Allen H. & L. Co. No. 1) rolled to Box 32, for a fire at 32 Golden Street. The time*: 5.32 *P.M."* Come again, Brother Peck—and thanks for the kind words about this column. It's items like yours that gives it whatever value it has.

* * *

Old Sol—Hot Stuff

This'un, too, may go down in the records as somewhat Ripleyesque; our West Virginia newsclipper sends the item from the Huntington (W. Va.) papers so we print it. This yarn is about the sun

(*Continued on page* 597)

For Practical Discussion of Current Fire Department and Fire Management Problems

SIRENS ON FIRE APPARATUS DURING WARTIME

WITH the declaration of war, and the subsequent preparations that have been made to warn civilians of a possible air raid, the use of the siren as a warning signal of the approach of fire apparatus has in a number of cases had to be discontinued. Many cities use sirens as an air raid warning, and as a result have prohibited their use on fire apparatus in order to avoid confusion. In such cases, bells or exhaust whistles have been used.

Many cities, however, have other means of air raid warning and still use sirens on apparatus.

As this discussion is to be continued in the next issue, readers are invited to send in their comments. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York, New York.

HERE IS THE PROBLEM

Now that sirens are being used for air raid alarms, do you permit the use of fire apparatus sirens in answering fire alarms?

If not, what warning signals (bells, whistles, etc.) are used?

Do you feel the alternate signals are satisfactory?

If not, how, in your opinion, could the problem be best solved?

Discussion of the Topic

Roy W. Alsip, Champaign, Ill.: I believe that sirens should be permitted on fire apparatus. I witnessed the approach of fire trucks in a congested area, and believe that I could have walked almost as fast as the equipment moved through traffic. The sirens were silent on this apparatus and the bells alone were being used.

We are using sirens all through Illinois, I understand, with the exception of the Chicago district.

I believe that high-powered whistles could be used to better advantage than sirens in giving the air raid warning signal. It certainly would be better in cities having big manufacturing plants where air and steam pressure is maintained twenty-four hours a day. In our setup here in Champaign, we will utilize these factory whistles, together with the big whistle at the University of Illinois. We have had tests here in Champaign and they certainly have proved satisfactory.

Silencing the sirens on fire apparatus would hamper the calling of volunteer fire departments. I believe that the response of equipment, especially in small places where there are factories doing defense work, is just as essential as the air raid warning signal. Destruction by fire of defense material is just as bad as being bombed, I believe.

C. F. Baker, Chief, Highland Park, Mich.: We have at the present time four five h.p. three phase sirens of a standard make in service to cover an area of 2.93 square miles.

We do not use our fire department sirens to warn the public in the event of an air raid, and therefore have not restricted the use of our fire sirens on the apparatus while responding to an alarm of fire. It is my opinion that cities which are using fire department sirens as an air raid alert should restrict the use of these sirens, using nothing but bells while responding to alarms of fire.

I have noticed that in some cities sirens have been installed with no regard for the areas to be covered. This practice causes the city to supplement the warnings with fire department equipment. Had sirens been purchased which would give off a given number of decibels of sound at a distance of 100 feet, allowing the proper amount of drop each time the distance is doubled thereafter and remembering that the number of decibels should not go below 70, only then would the installation be a satisfactory one.

Robert McGuire, Chief, Gary, Ind.: We still permit the use of our sirens while going to a fire, despite the fact that sirens are used for air raid purposes. It would be very hazardous at this time to do away with them, since the public is dependent upon the warning sound of the siren to clear the streets for the emergency apparatus.

Michael J. Kane, Chief, Woburn, Mass.: All our apparatus is equipped with both bells and sirens. For air raid alarms eight factory whistles blow, in addition to our fire alarm signal.

I believe people have been educated well enough by fire departments, especially in large cities in years gone by, to recognize the importance of a siren on fire equipment. Therefore, they still would clear the streets at the sound even in the event of an air raid.

James Louis McLane, Chief, Charleston, W. Va.: At the present time we are still using sirens on apparatus. The question of an alternate signal is being considered by the City Council now.

I do not believe bells, as suggested by some, have sufficient carrying sound to warn traffic. Exhaust whistles may be the answer to this question, although I do not like them on fire equipment.

Alex Thomson, Chief, Detroit, Mich.: The Common Council is preparing to pass a city ordinance this month to suspend the use of all whistles and sirens on all types of vehicles for the duration of the war. Bells will be used on apparatus for warning signals.

Joseph A. Kirby, Chief, Dayton, Ohio.: Sirens, bells and whistles are used on apparatus making emergency runs.

We have experienced no difficulty by using the above for warning signals. We have had fourteen zone or district blackouts. On Wednesday night, August 5, we had an all-city blackout which was extremely successful. There were no accidents of any kind and only a few minor blackout violations.

We used in these trial, or practice blackouts, bombs as warning signals. But on the all-city blackout we used twenty-four sirens located in the best suited places in the city. They were mounted on platforms fifty to seventy-five feet high; also on some of our highest buildings. We have six 5 h.p., five 2 h.p. and thirteen smaller sirens.

Edward J. Cannon, Chief, Norfolk, Va.: We are still using sirens on fire apparatus in response to an alarm of fire. On the return, the bell is used.

I do not feel that alternate signals are satisfactory. In my opinion, it would be difficult to obtain any warning signal which will replace the siren

for effectiveness during blackouts or air raids, as the hazard increased by parked cars and congested corners, will make any substitute unsatisfactory.

In our city, the air raid sirens are steam operated, and the apparatus sirens operated by electricity. Each has a very distinct and separate tone, which makes it easily distinguishable from the other.

A. E. Homann, Chief, La Porte, Ind.: We still use sirens on our apparatus.

We have a large steam siren and a small electrical siren located on factories in the city. In addition two large factory whistles in different parts of the city are used for warning signals. This is very satisfactory. These signals are all used at one time. I do not believe in having too many signals, as they only tend to confuse people.

Brooks McClure, Chief, Huntington, W. Va.: Our city is using the whistles of manufacturing plants for air raid alarms. We are still using sirens on our fire apparatus.

If they decide to change to sirens for air raid alarms, I would prefer to use bells for answering alarms, as in our past experience with the use of exhaust whistles, we have met with considerable trouble in the operation of our motors.

Frank Clem, Chief, Anderson, Ind.: We are not using sirens for air raid alarms. We have installed an old whistle, which is quite large, at our municipal light and water works.

We feel that alternate signals are satisfactory, although we have never held a practice blackout. We feel that the problem of a signaling system is one of the public's knowing the signal and of having the sound carry to the boundaries of the city.

A. L. Lancaster, Chief, Wilson, N. C.: We are at the present still using our sirens when answering alarms. However, we have been faced with the problem of using some other means.

Insofar as our alternate is concerned, I don't believe we will find one that is as satisfactory as the siren.

Exhaust whistles, or bells, in my opinion will be the best alternates.

C. A. Crosier, Chief, Battle Creek, Mich.: Steam whistles are used for air raid warning in our community, so consequently we are using the sirens on our apparatus as usual.

Fred J. Washburn, Chief, Auburn, N. Y.: We will use bells on apparatus answering alarms for fire during blackouts, instead of the siren.

W. B. Sykes, Chief, Portsmouth, Va.: During the test blackouts we do not blow sirens on the apparatus while responding to alarms.

As this section of the country is considered a hot spot, I feel there is too much unnecessary blowing of sirens, and I have instructed my men to this effect.

Our air raid warning is given by sirens located throughout the city. I feel, for this reason, that we should keep down all unnecessary noises as far as possible.

Horace S. Jose, Chief, South Portland, Me.: We use sirens on our apparatus as warning signals for responding to alarms.

We are working out an air raid alarm system using self-contained units, i.e., gas engine and compressor combined.

THIS DISCUSSION WILL BE CONTINUED

Due to the large number of Chiefs who contributed their experiences, the discussion on this subject will be continued in the next issue.

George E. Jacobs, Chief, Canton, Ohio: The City of Canton has not installed air raid alarms to date. Due to this fact we still use sirens on fire apparatus.

We recently placed orders for three new pumpers. Bells were specified in addition to sirens, but we were informed by the manufacturer that they could not furnish the bells due to government restrictions. It looks as though some other means will have to be adopted. If so, it will be necessary to thoroughly inform the public as they are familiar with the sound of the siren.

I believe the changing of signals will slow down the response to fires.

Albert Luedeke, Chief, Freeport, Ill.: We use a fire bell on our apparatus for warning. The siren can be used in an emergency.

Alternate signals are satisfactory if used and regulated correctly.

Air whistles could be attached for the duration.

M. K. Evans, Chief, Lynchburg, Va.: Some of our apparatus is equipped with sirens and some with exhaust whistles.

During practice blackouts, when we are given several test runs to make, we do not use either the sirens or whistles while we are making the run.

M. J. Hayden, Chief, Bridgeport, Conn.: Here in Bridgeport a series of short blasts on factory whistles is used for air raid warning. One long blast of several minutes duration is the signal for the all clear.

Headlights and sirens are used to reach a fire during a blackout.

Several engine houses and public buildings located in different sections of the city have large sirens mounted on the roofs. These sirens are very successful as air raid alarms.

A. Chamberlain, Chief, Hillside, N. J.: We are continuing to make use of the sirens on apparatus in responding to alarms. There has ben no talk of discontinuing them as the air raid warning is given on the steam whistle of one of the manufacturingp lants.

H. C. Crumb, Chief, Bay City, Mich.: We still use the sirens for fires. At the present time we are using bells, sirens and whistle for air raid warnings.

I do not thing it is advisable to stop the use of sirens by fire departments. I am in hearty accord with any other arrangements that can be made so as not to disrupt the regular setup of fire appartus responding to fires.

I am in favor of whistles, and I think that plenty of them are available for air raid alarms.

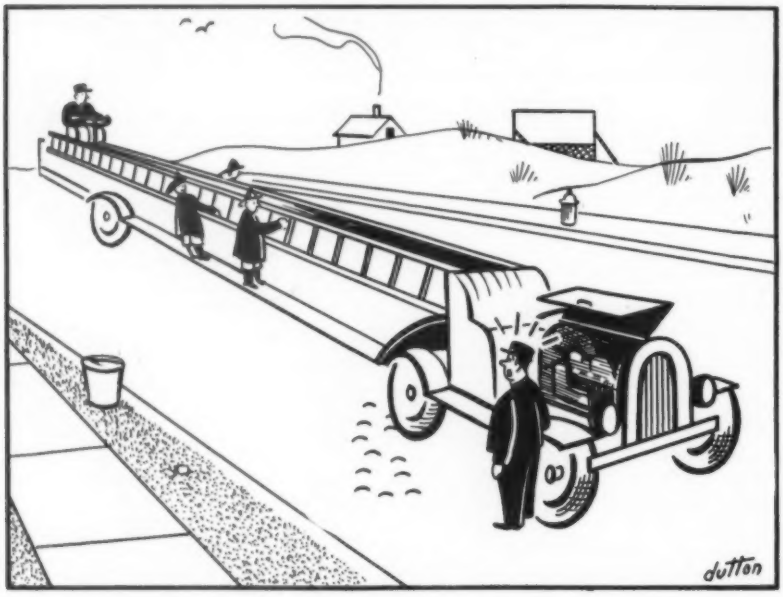
Anthony J. Mullaney, Chief Fire Marshal, Chicago, Ill.: The sirens on all apparatus of the Fire Department, Police Department, ambulances, and the like, have been ordered discontinued since December 7th by the United States Coordinator of the Chicago Metropolitan Area, and are only to be used as an air raid signaling device.

In responding to alarms of fire we

(*Continued on page* 599)

Willing Hands, But Untrained Bluejackets and Auxiliary Firemen, Carry an Injured Woman to an Ambulance, Following an Apartment House Fire at San Francisco, Cal., Recently, at Which Thirty-Four Persons Were Injured. Trained Firemen Would Never "Jacknife" an Injured Person. Paralysis, Through Puncturing of the Spine by Fractured Bone, May Result from Carrying in This Manner

FALSE ALARMS



"All Off Fellows . . . Looks Like We'll Have to Push!"

Worth the Risk

The church service was proceeding successfully when a woman in the gallery got so interested that she leaned out too far and fell over the railings. Her dress caught in a chandelier, and she was suspended in mid-air. The minister noticed her undignified position and thundered at the congregation:

"Any person who turns round will be struck stone blind."

A man whispered to his companion: "I'm going to risk one eye."

The Hero

As a tall, athletic-looking young man entered the room he was greeted by many friends.

"A popular young man?" asked a stranger of his neighbor.

"Yes," was the reply. "He distinguished himself when the circus was here."

"In what way?" asked the stranger.

"A lion escaped and, when everybody was yelling and trying to get away, he walked calmly to the lion's cage and shut himself inside."—*Goblin*, Canada.

Quick Thinking

To start with, Jones does not cut a distinguished figure in his evening clothes. In a fashionable restaurant the other night, as he stood near the door waiting for his wife, a tall, pompous man came up and asked: "I say, my man, are you the head waiter?"

As quick as a flash Jones answered: "No, but I heard him tell a young man this afternoon that he wasn't taking on any more help."

Rastus (on being sent to the general store): "My boss wants a pane o' glass nine by 'leven."

Clerk (jokingly): "Haven't got that size, Rastus, but will a 'leven by nine do?"

Rastus (thinking it over seriously): "I'll try it. Maybe if we slip it in sideways, nobody'll notice it."

Doctor: "I can't quite diagnose your case. I think it must be drink."

Patient: "All right, Doctor, I'll come back when you're sober."

"My wife kisses me every time I come home. That's affection."

"You're wrong. That's investigation."

Husband: "You will never succeed in making that dog obey you."

Wife: "Nonsense. It is only a matter of patience. I had difficulty with you at first."

Low-brow is a person who likes peppy stories, girlie shows, and good times—high-brow is low-brow who won't admit it.

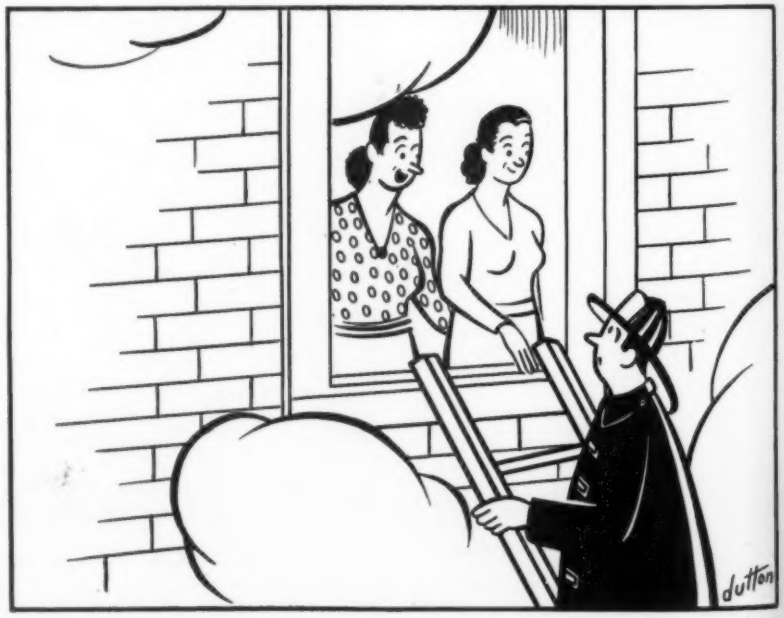
Sunday School Teacher: "Who was Eve?"

Bright Scholar: "The first chicken that ever ruined a man's garden!"

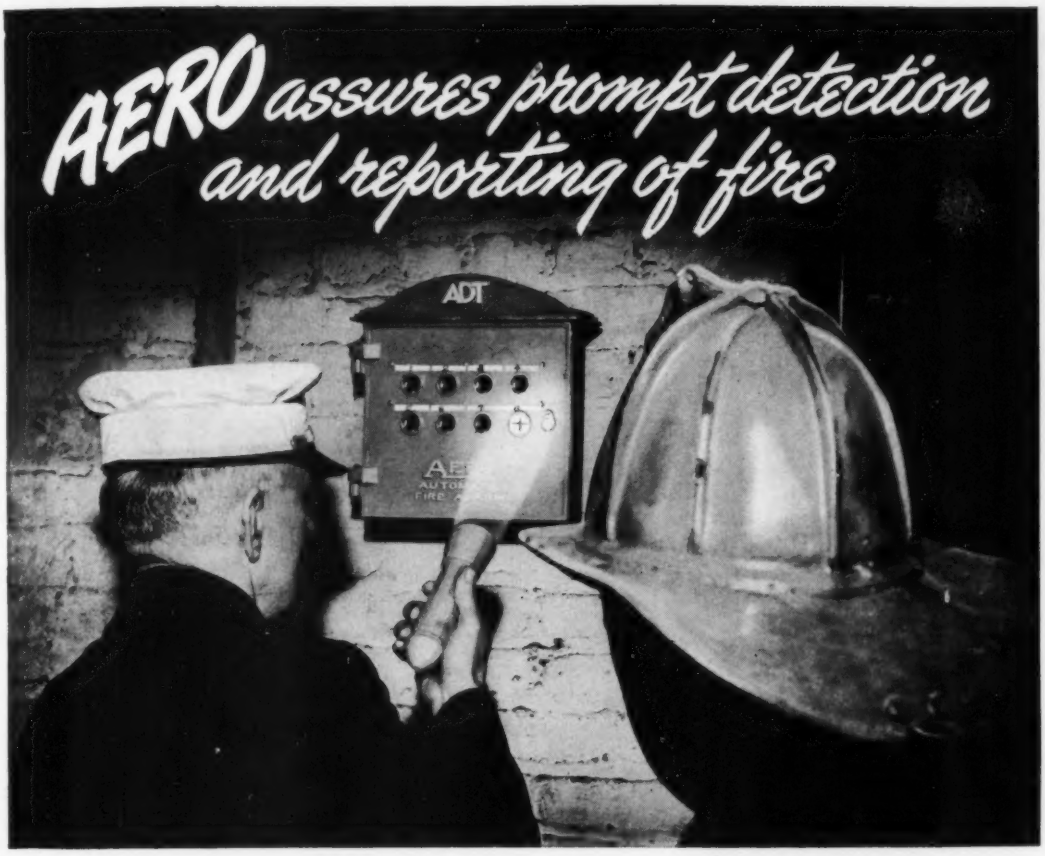
Indian girl have plenty fun with beau and error.

Trend of the Times

There's an amusing story going the rounds about a country dog that came to the city looking for a fire plug. It seems that the dog, after traipsing many weary hours, came upon a parking meter. Gazing thoughtfully upon meter, it mused: "Hmmmm—a pay toilet eh?"



". . . And This Is My Sister Louise. Could You Scare Up a Friend for Her!"



Thousands of concerns find A. D. T. Automatic Protection Systems a wartime necessity

No matter how complete your present fire protection may *seem*, your fire defenses are but halfway measures unless they include means for *detecting and reporting fire automatically*. For only by automatic means can you have the assurance that fire will be discovered and the alarm transmitted in those vital first few minutes that may mean the difference between an incident and a disaster.

The A.D.T. Aero Automatic Fire Alarm effectively and economically eliminates the hazards of belated discovery and delayed alarms. No matter where on the premises a fire may start...no matter what the hour of day or night...Aero automatically detects the outbreak *when it starts*, and automatically summons the fire department direct to the premises.

For sprinklered properties, A.D.T. provides Sprinkler Supervisory and Waterflow Alarm Service, which automatically summons the fire department the instant a sprinkler head opens. This service also automatically detects and reports trouble conditions (whether caused by accident or sabotage) that might impair the sprinkler's effectiveness.

Write for free descriptive booklets.

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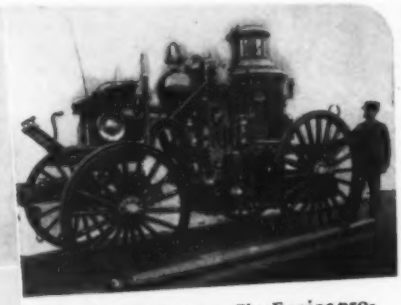

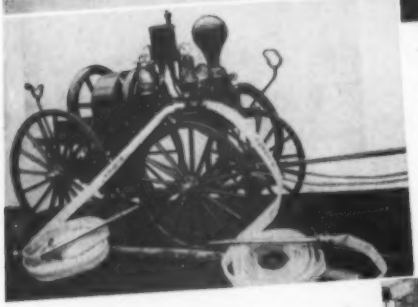

1886 Steam Fire Engine produced by Waterous just 21 years after the Civil War. True, these became obsolete but few ever wore out.

1898 Gasoline Fire Engine—before the days of electric ignition—the first departure from steam and the forerunner of the modern motor driven fire engine. Many of these are still in service.

1906 Early type self propelled fire engine, 300 G.P.M., built for City of Wayne, Pa., two motors were employed, one of the wonders of its time.

1911 Gasoline powered fire engine, 900 G.P.M., built for New York City. Motor, chassis, pump and all parts made by Waterous. Size of engine, 6 cylinder. 7¼" bore, 8" stroke.

1942

The fact that many WATEROUS fire engines over 40 years of age are still in service, plus priceless experience, is *your* assurance of WATEROUS *Dependability.*

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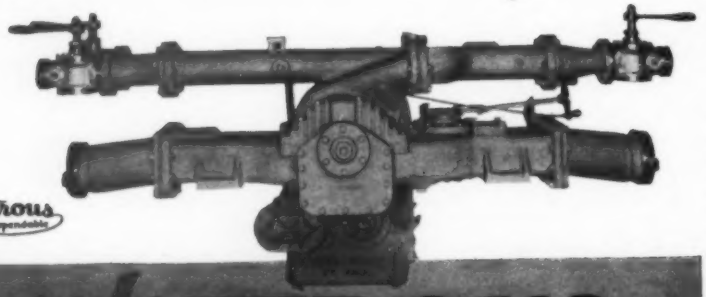

Waterous Dependable

WATEROUS

CENTRIFUGAL-ROTARY

FIRE PUMPS

Rights of Auxiliary Firemen

(*Continued from page* 565)

On the day of the accident, he just happened to be paid $5 because there happened to be six fires that night."

So, therefore, when determining whether a volunteer fireman is entitled to compensation for an injury, or whether he is entitled to receive pension payments, the laws of the particular state must be interpreted to determine whether the Legislature intended to include volunteer firemen.

Damages Allowable

It must be remembered that although a volunteer fireman may not according to state laws, be entitled to compensation for injuries or to pension payments, yet, under all circumstances, he is entitled to recover damages from a property owner whose negligence resulted in the injury. Moreover, it is not essential to the right to receive compensation that the fireman should have been working at the particular time when the injury was received. The employment is not limited to the exact moment when he begins work or when he quits work. A risk is incident to the employment when it belongs to or is connected with what a fireman has to do in the fulfillment of his contract of service. It may be incident to the employment when it is either an ordinary risk directly connected with the employment, or an extraordinary risk which is only indirectly connected therewith.

On the other hand, an employe must not unnecessarily increase the risk of injury to himself beyond that ordinarily contemplated or choose an unnecessarily dangerous place for the doing of the act which is claimed to be incident to the employment. In other words, where a member of a fire department chooses to go to a dangerous place where his employment does not necessarily carry him, and thus increases a danger of his own choosing altogether outside of any reasonable requirement of his work, such risk is *not* incident to the employment. This rule is applicable where a fireman endeavors to recover under the common law damages for an injury. See latest higher court case involving these important points of the law, Landon v. Industrial, 173 N. E. 49. This court said:

"An injury must arise out of and in the course of the employment or it must be incident to the employment. . . . An employe is engaged in the course of his employment when the injury occurs within the period of his employment, at a place where

he may reasonably be, and while he is reasonably fulfilling the duties of his employment or is engaged in doing something incidental to it. . . . An injury arises out of the employment when there is apparent to the rational mind, upon consideration of all the circumstances, a causal connection between the condition under which the work was required to be performed and the resulting injury. . . ."

Fireman Assumes Risk

Notwithstanding, varied law on this subject various courts have held that an injury sustained while a fireman is in the act of obeying the instructions or orders of a superior "arises out of the scope of the employment." Moreover, although a fireman is not ordered to perform a dangerous duty, yet if he does so within the scope of his employment, he is not deemed to be contributory negligent.

For example, in the leading case of Smith v. Twin, 144 Atl. 58, it was disclosed that a fireman was killed when an explosion occurred in a basement into which he had gone to investigate the strong odor of escaping gas.

In holding that the risks assumed by firemen does not bar a recovery of compensation, this court said:

"When there is a legal duty, as here, to perform the act, it is not to be said that performance of the duty is negligence which will bar recovery. . . ."

Another important point of law is that the courts are favorable to firemen who sue to recover compensation or a pension for an injury. And the courts will decide litigations of this nature in favor of firemen, if it is possible with any degree of fairness to do so. Moreover, this is so although the physician's testimony is not strictly in favor of the firemen.

For instance, in Blair v. Coleraine, 225 N. W. 284, testimony was introduced showing that a fireman who suffered a paralytic condition was 62 years of age and had for 20 years been a volunteer fireman. During the noon hour he answered a fire alarm, ran as rapidly as he could, hurriedly put on his fire fighting equipment, as a part of his customary duties, upon reaching the proper location, he dropped off backward from the moving truck, holding one end of the hose for the purpose of snubbing it about the hydrant, while the moving truck continued to run out the hose. In thus leaving the truck, he misjudged the speed at which it was going and came down to the pavement stiff-legged, receiving a jar. He felt hurt immediately upon striking the pavement, felt a sudden jerk, his eyes blurred, and his neck snapped down.

The Upper Hand
In the WAR that *NEVER* Ends

The war being fought today on battlefields all over the world, has spotlighted tactics designed to gain the upper hand quickly. Rapid mobility of equipment and the ability to strike speedily and effectively at the beginning of an action are factors which have won many battles almost before they started. That's modern warfare.

Modern fire fighters have long recognized that similar tactics would gain *them* the upper hand in their own unending battle. That's why the versatile LaBour Fire Trailer has won the regard of thoughtful authorities.

Despite its small size, this rugged, dependable unit can be a mighty important piece of equipment. One or two men can quickly hitch it to any motor vehicle, speedily reach a danger point and do an effective job of fire fighting. The LaBour Fire Trailer, delivering 150 GPM at 100 lb. pressure, has a splendid record of performance in spots when regular equipment was not available. Its cost is comparatively low and easily within the reach of even the smallest fire fighting unit.

Bulletin 49 gives complete and interesting details. It's free for the asking—so send for your copy today.

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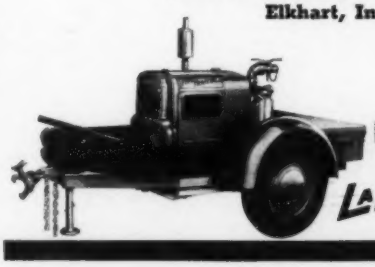

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Running *Oil Fire wiped out . . .* with ROCKWOOD WaterFOG

30 seconds to wipe up this dangerous running oil fire with WaterFOG

10 ft. size $62.00 F.O.B. Worcester

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Rockwood WaterFOG Applicators with ball-type shut-off. Fit existing hose lines.

Type N-20
¾" size $15.00
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1½" size $25.00
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Comes in four sizes to fit existing hose lines. Projects a larger WaterFOG pattern greater distance by a new method.

Rockwood WaterFOG Applicators

You will find many uses for the handy Rockwood WaterFOG Applicators. Use them singly or in multiples of two or three to quickly clean up large area fires of flammable liquids such as fuel oil, kerosene, mineral spirits, incendiary bombs, etc. Protect storage tanks from ignition by radiant heat. WaterFOG will keep exposed materials cooled below their ignition point. Or use the Applicators to fight fires in confined areas such as cellars. Poke the Applicator thru a window or other opening and watch smoke and flame disappear as WaterFOG cleans up. Water FOG works just as effectively on ordinary combustibles.

Rockwood N-20 WaterFOG Nozzles

You can use WaterFOG on large fires impossible to extinguish with the low range of other types of fog or spray nozzles. You have fire fighting distance of 50 feet at 100 lbs. pressure with the 2½ inch size of the Rockwood type N-20. This is possible by the use of an advanced new method developed by the Rockwood research engineers known as the *internal impingement* method of generating and projecting fog. *Low* velocity WaterFOG particles with their greater extinguishing action are projected right into the heart of the fire by means of the proper amount of *high* velocity WaterFOG induced into the low velocity pattern. For use on fires in flammable liquids and oil filled electrical equipment.

Order from your regular fire equipment distributor

ROCKWOOD SPRINKLER CO.

Specialists for 36 years in the Manufacturing and Installation of Fire Protection Equipment

54 HARLOW STREET WORCESTER, MASS.

He reported his condition to the chief of the fire department. Later he found that his left side, arm, and leg were paralyzed.

The doctor testified that he did not know whether or not the paralytic condition resulted from cerebral hemorrhage which may have been caused by the fireman jumping from the fire truck. However, the court held the fireman entitled to compensation under the State Workmen's Compensation laws, stating the following important law:

"At the time he responded to the fire alarm, relator was feeling perfectly normal and he had never before had any trouble such as he described or any indication of it. . . . A determination to a mathematical certainty as to exactly when, during the performance of his duties as a fireman, the hemorrhage took place was *not* necessary. It would be unreasonable to expect it."

Firemen Overcome by Smoke at Warehouse Fire

A spectacular four alarm fire wrecked the seventy - five - year - old four - story stone storage warehouse of the Victory Storage Company in Philadelphia, Pa., on June 7.

A passerby who saw smoke coming out underneath the cornice of the roof of the building ran down to Engine 5 located a half a square below the warehouse and told the firemen. Engine 5 sent a still alarm in at 2:29 and at 2:30 pulled Box 274. This brought two engines, two aerial trucks and a battalion chief. A second alarm was sounded at 2:42, bringing four engines, one aerial truck, a rescue squad, a battalion chief, the first deputy chief and Chief Engineer William Cowden to the scene. The third alarm at 3:01 and the fourth alarm at 3:07 brought four engines, one aerial truck and a battalion chief on each alarm. A special call was sent in for Water Tower No. 1. This was the first time a water tower has been in West Philadelphia because of the fact that there are no high pressure mains in this section. A special call was also sent for another aerial truck.

The fire raged out of control for more than two hours and during its height, firemen played streams from a safe distance from the building, because it was feared that the walls might collapse because of the intense heat and the tons of water that were being poured into the building.

Several firemen were injured and several were overcome with smoke, but only one required hospital treatment.

The building and its contents were a total loss. The cause of the fire was not determined.

JOHN WOLFERT.

New Members for the International

The Pacific Coast Association of Fire Chiefs under the direction of Jay W. Stevens, its Secretary-Treasurer, has recently brought 125 additional new active members into the International Association of Fire Chiefs.

WAR FARE

Alarms and Discussions Clipped and Culled from the War News of the Day, of Interest to the Fire Service.

Roi B. Woolley

Only for Night Trips

Britons now need not carry gas masks with them, except when they leave home overnight, Home Secretary Herbert Morrison has ruled. *"I do not anticipate a gas attack immediately. For all I know it may never come, but we will watch the situation. If events make it advisable to resume carrying of masks, the public will be informed,* he said.

Some of the experts are beginning to claim U. S. A. is unduly alarmed over gas and believe that the money being spent for masks (which will not begin to take care of even seaboard requirements) should better be devoted to purchase of fire fighting equipment.

Speaking of gas masks, papers in May reported that OCD was speeding their manufacture—$19,000,000 having been made available to Chemical Warfare Branch, and that five existing factories will turn out 60,000 a month. . . . Many contracts had been let.

* * *

It Costs Dough!

The first five mass bombing raids on German cities cost Great Britain $96,128,000 (exclusive of lives lost)—but the damage inflicted on German's production machine was probably 20 times that sum, according to official estimates. The costs were estimated as follows:

5,000 tons of bombs....	$56,000,000
162 bombers lost.....	40,000,000
Fuel and oil supplies..	128,000

It was stated that 4,250 planes took part in the raids on the four cities subjected to the heaviest attacks. Cologne, Essen, and Bremen were targets of 1,000-plane raids and Hamburg was subject to two attacks with large forces of several hundred planes.

* * *

Those Gasoline Hoarders

They're still doing it—"storing" away gasoline in homes and apartments. Ever-watchful Brothers have reported the following:

White Plains, N. Y.: Chief Abbott Griffin's men nailed George Dandrow, sales executive and got conviction before Judge Filardi Jr. for his storage of 110 gals. gas' in private garage behind his home.

Union City, N. J. Horst Martin stored 28 gals. of gas in celler of 8-family house was fined only $10 by police Recorder Lepore that city.

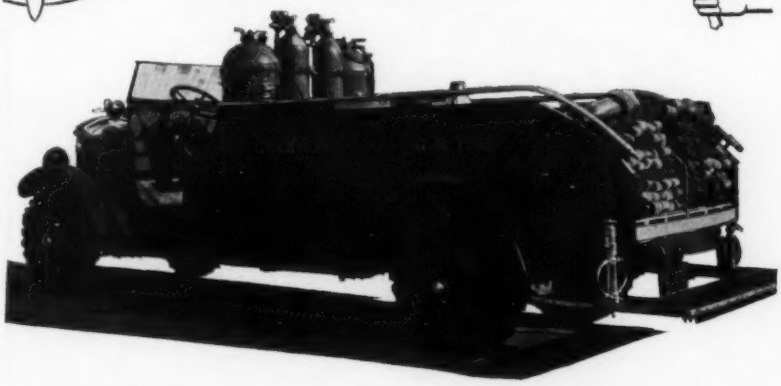
Commissioner and Chief Patrick Walsh of New York City admonished the people of his city concerning storage of gasoline thus: *A five-gallon can of gasoline if it exploded, would blow the average one-car garage sky-high, and would start a fire which might very well take in a series of wooden frame houses if it were not immediately checked.*

* * *

This Is What Must Be Expected

As an example of what sabotage can do, consider the June forest fires in Canada. The haze which obscured the skies for days over Montreal, was ascribed by officials to forest fires raging over widespread areas at Chicoutimi, 230 miles away. Officials said over 1,500 to 2,000 square

BOMBS OR SABOTEURS MAY NEVER REACH YOU... BUT ARE YOU *Ready?*



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The most economical and efficient first aid protection against sudden, extra-hazardous fires

• Two 350-lb. duGas extinguishers, in a special chemical truck mount, are important equipment of the Green Bay (Wis.) Fire Department. Wherever dangerous fires break out in inflammable liquids, gases under pressure, vital electrical installations, and elsewhere — this duGas truck will be on the job... certain, always ready, and fast.

DuGas hand and wheeled extinguishers are available in a variety of sizes.

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MIDWESTERN MANUFACTURING CO.
MACKINAW, ILLINOIS

Still the most reliable source of supply for Firemen's Clothing

An appalling number of war caused fires are in progress and in prospect all over the world. This means the tremendous demand for protective clothing will continue, and strongly indicates the advisability of ordering needed articles as far in advance as possible. The needs of America's armed forces for protective clothing come first, but municipal needs, particularly in defense area, can be filled, although unavoidable delays sometimes occur. However, production has been stepped up and you can still look to *Midwestern* in these times, as in the past as the most reliable source of supply for firemen's protective clothing. Midwestern Manufacturing Company, Mackinaw, Illinois.

Midwestern coat with detachable lining of pure wool. Adaptable to all conditions of weather. Offered in several materials. Write for catalog.

"SAFETY FIRST— and ALWAYS"

In Case of Fire

What will your water lines deliver? Better find out before it's too late.

Static pressure may give a false sense of security. But—Dynamic pressure tells the real story.

Let us tell you the whys and wherefores about the—

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"FIRE AND SAFETY" DIVISION

miles were burned, tying up manpower, delaying the war effort and destroying valuable timber.

* * *

From European Fronts

If your notes (money) in London are bombed the procedure is to hand in to the London Post Office all that is left after the fire. *"Fresh notes are issued in this case,"* said a P.O. official. *"There must be more than half of the note still left; and the whole of the sentence, "I promise to pay."*

* * *

An explosion in government building at Latakia, Syria, killed the Governor of the district and 15 other persons, according to reports from trans-ocean news agency. Dynamite stored in building was blamed.

* * *

The civil court and adjoining office of the magistrate at Bloemfontein, capital of Orange Free State, were heavily damaged by one of three incendiary fires. At same time bomb thrown into printing works did heavy damage. Sabotage has been rampant here.

* * *

Two members of Cape Town (S. Africa) University staff have developed an inexpensive method of making ordinary window glass withstand explosion of a 500 lb. bomb 75 feet away. Process is to be made available to United Nations.

* * *

Sabotage keeps up in Czech cities, following Reinhard Heydrich's death. Many mysterious fires are reported to have broken out in the Skoda armament works at Pilsen.

* * *

Here are some miscellaneous data from Great Britain. Damage to famous St. Paul's Cathedral during last autumn's blitz amounted to 150,000 pounds. . . . Number of civilian casualties in British Empire from Sept. 3, 1939 to September, 1941 were, killed, 43,673; wounded and hospitalized, 50,346. . . . In 1940, Civil Defense cost Britain 89,000,000 pounds. More was spent in 1941.

* * *

Hot Off the War News Tape

Fire Chief Harry Pierson of Village of West Haverstraw (N. Y.), has asked women to sign up for a fire-fighting course because local F.D. has suffered so much from inductions and enlistment in formed forces. . . . Mayor LaGuardia (N. Y. C.), has asked city magistrates to up the fines being levied on smokers who break laws against smoking on piers. . . . General Haskell, Director of (N. Y.) State Civilian Protections sez that women wardens are the best, thus sticking his neck out!. . . . When a New York soldier, in Philadelphia, attempted to prime carbueretor of stalled truck, resulting explosion critically burned him. . . . Guards and firemen fought for 3½ hours to control fire in laundry of Wandsworth prison, London, England. . . . Bayley F. Matthews plant protection and personnel superintendent "of a Hollywood studio" predicted before NFPA meeting that there would be a wave of sabotage here. Mebbe Hollywood's got "inside information"?. . . . In Los Angeles, Toscha Seidel, 43, Russian-born concert violinist, enlisted in Navy as musician, explaining: *"I want to fiddle while Tokyo burns"*. . . . New York City has sent its old elevated cars to do war duty. Now its ferryboats are going, so we're told. . . . Mayor LaGuardia warns people of New York to *"use regular fire alarm boxes rather than the telephone to*

summon apparatus to fight a fire resulting from an air raid." Meanwhile, pretty generally, wardens are being told to use the *telephone*—and they're, in turn, telling their people to *phone* alarms. Wonder when they'll get together on ARP instructions in this Country?. . . . Over'n Teaneck (N. J.) Chief Frank Murray continues to make the headlines. Latest is his substitution of high school boy seniors to fill places of drafted members of his Department. . . . Dr. Juda, German refugee at Harvard claims to have developed a new fire retardent formula designed to offer protection to war factories, military establishments, wooden ships, etc. . . . Owners and operators of commercial buildings and water front structures in New York City have begun registering their buildings in accordance with ordinance requiring special fire fighting equipment for air raid protection. . . . Orchids to members of Eureka Hook and Ladder Vol. Fire Company of Rockville Centre, N. Y. Since July, 1941 twenty out of forty-five members have joined the Army or Navy. Looks like this constitutes some sort of record.

Fire Insurance Rates Cut at Lewistown

The efforts of the Lewistown, Mont., Fire Department in improving the city's fire defenses have brought results in the form of reductions in fire insurance premiums from thirteen to twenty-five per cent. The reduced rates are effective to fire insurance policies issued on or subsequent to April 1, 1942.

Lewistown now has the lowest fire insurance rates of any first or second class city in Montana.

Average insurance premium reductions are estimated at twenty per cent or between $11,000 and $12,000 savings annually to the city residents.

The chief accomplishments in the program which led to the reclassification of the city were listed as duplication of the gravity water line from the spring, additional arteries to the mercantile district, more and larger hydrants, additional equipment for the fire department and establishment of a fire prevention bureau. The department is headed by Chief Art J. Baker.

Priorities Obtained for Forestry Trucks

Kenneth I. Fulton, State Director of the Department of Natural Resources, who has just returned from Washington, has announced that he had obtained priorities for the purchase of 195 additional fire trucks.

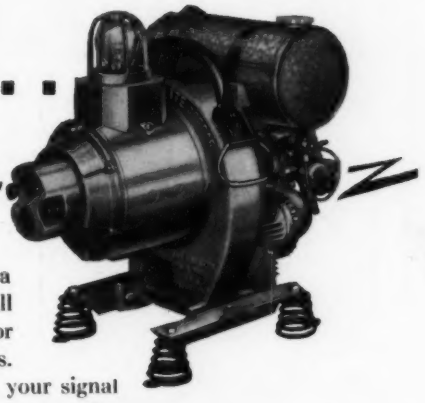
The trucks will cost between $3,000 and $4,000 each and will be the California Forestry Service type, carrying several hundred gallons of water and a small booster pump, hose and other equipment.

The trucks will be used as standby equipment to be placed in pools in various strategic locations in the State.

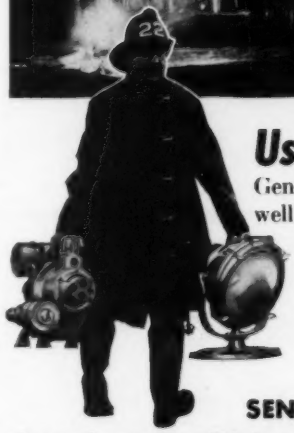
In event of necessity, the trucks will be rushed to wherever needed. State fire plan officials determined that to get enough trucks for all parts of the State was an impossibility and hit upon the pool plan for the trucks as well as other equipment.

BOB GREENOCK.

Squeeze All the Juice out of it . . .



Use it well If you have a Homelite Portable Generator, get all the good you can out of it. Use it for floodlights on *all* your night fires. Use it as a power stand-by for your signal alarms. Make it available to your community as an emergency "power house" during failures of local power supply. Let it play its part in your civilian defense program. Keep it busy — use its 1800 watts of power for all they are worth.



Use it Wisely Your Homelite Portable Generator is a rugged individual. It will stand up well under hard and steady service. But like all good machines, it requires a reasonable amount of care. And this care is all the more important just now when all new Homelites are going into the Army. Replacements are practically impossible these days.

SEND FOR THESE BOOKS

Our service manuals will help you keep your Homelite Portable Generators running better and longer. Send for free copies today, and make good use of them. When writing, specify the model and serial numbers of the Homelites you now have.

HOMELITE CORPORATION

809 RIVERDALE AVENUE, PORT CHESTER, NEW YORK, U. S. A.

FIRE FIGHTERS ON HOME FRONT USE ACME MASKS

Acme FULL VISION All Purpose Gas Masks are now being used by fire fighters in this and foreign countries, with maximum success. Because of its All Purpose Protection, the Acme Gas Mask is considered by firemen to be Vital Front Line Equipment.

The Acme Gas Mask protects against Carbon Monoxide, Toxic Smokes, Manufactured Illuminating Gas, all individual or combinations of gases. It also provides complete protection against Smoke Suffocation and other physical discomforts that are encountered in fighting fires.

The exclusive Acme Dead-Air Check Valves eliminate the possibility of re-breathing dead-air—a common cause of unnatural weariness.

Wide Acme Lenses

The wide FULL VISION Acme Lenses are made of flat safety glass and afford the wearer unrestricted and non-distorted vision to all sides. This is an exclusive and important feature in all Acme Gas Masks.

ACME HELMETS

The Acme Doughboy type Helmet is made of Manganese Steel and is the ideal Helmet to be worn by firemen during the present emergency. The inside of the Helmet is cushioned to relieve shock and provide head protection from falling objects. It can be adjusted to any head size—and meets ALL REQUIREMENTS.

Write for Prices and Literature TODAY

ACME PROTECTION EQUIPMENT COMPANY, INC.
Manufacturers
3616 LIBERTY AVENUE Cable Address ACMEPROCO PITTSBURGH PA U.S.A.

MARKET PLACE OF THE FIRE SERVICE

When you are in the market for fire-fighting equipment, first look through the advertising pages of FIRE ENGINEERING—your most reliable guide. If the products you are seeking are not advertised—then write to our Readers' Service Department.

FIRE ENGINEERING, 24 W. 40th ST., N. Y. C.

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of August, 1942. These figures, compiled from the telegraphic reports, are based on estimates made at the time and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent losses in thousands of dollars.

Month Ending August 31	Loss in Thousands of dollars
San Francisco, Cal.—Louise apartments damaged	65
Montreal, Que.—Oil-treating section of Point St. Charles oil plant of Sherwin-Williams Co. of Canada, Ltd., destroyed	80
Bennington, N. H.—Summer dwelling destroyed	50
Cleveland, Ohio—Forty animals killed in Ringling Circus Menagerie	170
Mountville, Pa.—Barn on grounds of St. Ann's Convent destroyed	50
Mellen, Wis.—Main plant of Penoke Veneer Co. destroyed	400
Cottage Grove, Ore.—J. H. Chambers & Sons lumber mill destroyed	125
Newark, N. J.—Verona Chemical Co. office building damaged	50
Medford, N. Y.—General Machine Works destroyed	80
Winfield, Alta.—Theatre, five buildings destroyed	50
Memphis, Tenn.—Army general depot damaged	50
Waco, Tex.—J. C. Penney department store destroyed, two other stores damaged	125
Wadhams, B. C.—British Columbia Packers Four-line Cannery destroyed	170
Prichard, Ala.—J. C. Sanders Cotton Mill Co. plant destroyed	400
Campbellford, Ont.—Gravlin-Bale, Ltd. Shoe Co. damaged	65
Vallejo, Cal.—Hoslum Food Market damaged	65
Chapel Hill, N. C.—New high school destroyed	130
Bremerton, Wash.—Five units of new Federal dormitory project destroyed	80
Kalamazoo, Mich.—Sutherland Paper Co. warehouse destroyed	60
Cedar Rapids, Ia.—Bldg. housing Wesley Klinger Paint Co., architect's office, shoe store, Modern Pleating & Button Co., destroyed	50
Geyersville, Cal.—Hardware store, five trucks, eight cars and eighty tires destroyed	65
Little Falls, N. J.—The New Colonial Inn destroyed	55
Hudson Falls, N. Y.—First Baptist Church destroyed	50
Oklahoma City, Okla.—Bordman Co. destroyed	80
Oklahoma City, Okla.—The Newstate Laundry and Zoric Cleaners plant destroyed	170
Sisters, Ore.—Hitchcock Pine mill destroyed	50
Lexington, Tenn.—Block of four bldgs. housing liquor store, cafe, cleaning establishment and jewelry store	50
Sault Ste. Marie, Mich.—Coal and coke sheds of Consumers Power Co. and coal sheds and conveyor leading system of Byre Fuel & Ice Co. destroyed	50
Mercedes, Tex.—G. E. Watson Produce Co. [illegible]cing plant destroyed and 450 bales of [illegible]ton damaged	55
Glendale, Cal.—Riviera Sportswear Manufacturing Plant destroyed and three adj. shops damaged	50
Spartanburg, S. C.—Cotton warehouse owned by Carolina Warehouse Co. and 950 bales of cotton destroyed	70
Little Rock, Ark.—Two bldgs. destroyed and two damaged	160
Sands Point, N. Y.—Main bldg. of Cedar Knoll, a residence destroyed	240
Cincinnati, Ohio—William S. Merrill Co. damaged	50
Dallas, Tex.—Southwest Wheel Co. bldg. and contents damaged, adj. baking Co. damaged	50
Bellingham, Wash.—Brooks Lumber Co. destroyed	80
Marked Tree, Ark.—The First Methodist Church destroyed	80

CLASSIFIED ADVERTISING

Bids Wanted, For Sale and Help Wanted, $5 per inch. Position Wanted, $2.50 per inch.

WANTED

Jobbers to sell our Morning Pride Firecoat, with Wing Freedom Sleeves, Chest Protector, Face Protecting Collar, Waterproof-Wool Wristlets, No Dirt Pockets. Made from Protected Rubber Fabric. Write today. Morning Pride Mfg. Co., 1986 Home Ave., Dayton, Ohio.

FOR SALE

750 gallon American-LaFrance pumper; excellent shape; completely overhauled. Box No. 25, c/o FIRE ENGINEERING, 24 West 40th St., New York, N. Y.

Inlet, N. Y.—Boat house and five boats at summer camp destroyed 65
Greenville, Ala.—W. T. Smith Lumber Co. plant damaged 50
Monroe, La.—Activated Carbons, Inc. plant destroyed 125
Lebanon, Ore.—Oregon Nut Growers' plant destroyed 65
Norwood, Mass.—Tannery destroyed with contents, including large quantity of wooled sheepskins for aviators' jackets.... 400
Dufur, Ore.—One third of business district including bldg. of Dufur Dispatch, Odd Fellows' hall and ten other bldgs..... 80
McKeesport, Pa.—Brick bld. of Roy C. Price Iron Works damaged..... 50
Moundsville, W. Va.—Watson Clothing store, hardware store, dept. store, cafe and dry cleaning store destroyed; fifth bldg. damaged 65
Salmon, Ida.—Masonic temple and contents destroyed 50
Spartanburg, S. C.—Carolina Warehouse Co. compartment damaged 65
Bowie, Tex.—Dehydration plant operated by Texas Chemurgic Industries, Inc. destroyed 50
Carlyle, Ill.—Ashley Milk Co. plant destroyed 125
Dearborn, Mich.—Recreation bldg. and 17 bowling alleys destroyed..... 50
Clay, N. Y.—J. Weller Sauerkraut factory destroyed 50
Salem, Ore.—Oregon State Penitentiary flax warehouse destroyed..... 50
Salt Lake City, Utah—Utah Fire Clay Co. plant destroyed 200
Oconomowoc, Wis.—Herold Lumber & Fuel Co. yard destroyed..... 65
Regina, Alta.—Western Dominion Coal Co. damaged 50
Rumford, Me.—Three bldgs. destroyed and one damaged 80
Spencer, W. Va.—Two bldgs. destroyed and one damaged 125

Fire Threatens Incompleted Ship

Fire recently swept through parts of a shipbuilding way on which a naval auxiliary ship was being constructed at the Western Pipe & Steel Company's yards in South San Francisco.

The vessel was not damaged except for blistered paint, the Twelfth District Navy headquarters said. The flames were apparently confined largely to a wooden scaffolding on one side of the ship. Origin of the fire was not immediately determined.

A night shift was working on the ships and helped the firemen from San Francisco, South San Francisco and Daly City extinguish the blaze.

Flames attracted the attention of motorists on nearby Bayshore Highway which leads down the Peninsula from San Francisco and caused a traffic jam.

BOB GREENOCK

TRADE MARK
GAMEWELL
REG. U.S. PAT. OFF.

Manufacturers of

EMERGENCY SIGNALING SYSTEMS

- Fire Alarm
- Police Signaling
- Air Raid Warning
- Industrial Fire Alarm
- Fire and Watchmen's Supervisory
- Automatic Fire Detection

Two thousand municipalities, several thousand industrial plants and many of the largest institutions now use Gamewell Systems for the protection of life and property and to ensure the permanency of established business.

We freely cooperate in planning protective Signaling Systems.

THE GAMEWELL COMPANY

Specialists in Public Safety

NEWTON UPPER FALLS MASSACHUSETTS

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the FACTS.

EDDY VALVE CO., Waterford, N.Y.

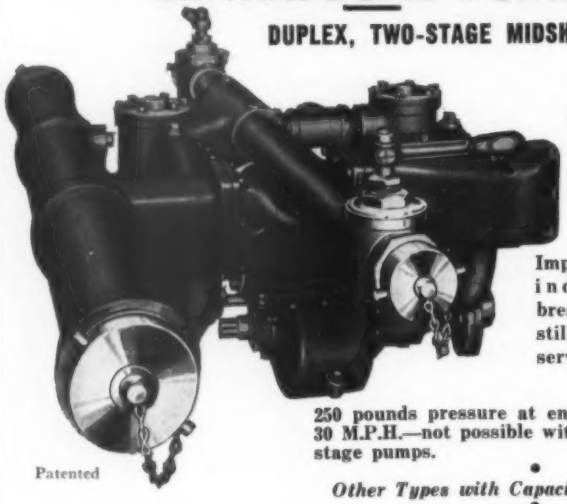
Barton Front Mounted

AMERICAN-MARSH PUMPS

Barton-American Midship

FIRE APPARATUS CENTRIFUGAL PUMPS

DUPLEX, TWO-STAGE MIDSHIP MOUNTED



Patented

High Pressure performance entirely unaffected when unit used to pump gritty water.

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Impellers mounted on individual shafts—breakdown of one pump still leaves one for service.

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250 pounds pressure at engine speed equal to 30 M.P.H.—not possible with conventional two-stage pumps.

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Other Types with Capacities to 750 G.P.M.

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WRITE FOR BULLETIN 8731F

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AMERICAN-MARSH PUMPS, INC., Battle Creek, Michigan

Pumps—and pumps only—since 1873

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YES! Pacific Portable Pumpers are enlisted for this war. Military demands and priorities curtail vital materials. Our endeavor has always been to render the best in quality and service. Your understanding and consideration of our position in these trying times is greatly appreciated.

Fire Fighting Equipment Division

PACIFIC MARINE SUPPLY COMPANY

SEATTLE, WASHINGTON

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ON THE BOOK SHELF

SELF-CONTAINED OXYGEN BREATHING APPARATUS—A HANDBOOK FOR MINERS by G. W. Grove, Supervision Engineer, Bureau of Mines, Pittsburgh, Pa.—234 pages, including photographs, drawings and appendix consisting of questions and answers—Superintendent of Documents, Washington, D. C.—$.35.

A handbook, "Self-Contained Oxygen Breathing Apparatus" which may play a vital role in saving valuable property and in protecting the lives of men engaged in wartime production of minerals, has been published by the Bureau of Mines.

The book contains information on the construction, care and use of both the older and newer types of apparatus worn by men in fighting mine fires and in rescuing persons overcome in mines because of insufficient oxygen or harmful gases, or in entering underground workings for exploratory or other purposes when they contain toxic or irrespirable gases.

Since its creation in 1910, the Bureau has instructed approximately 75,000 persons in the use of oxygen-breathing apparatus, as a result of which hundreds of lives have been saved following mine fires and explosions. The book is partly a revision of previous publications concerning the design, construction and operation and use of apparatus.

THE ORGANIZATION AND TRAINING OF INDUSTRIAL FIRE BRIGADES—Captain John C. Klinck, Memphis, Tenn., Fire Department—128 pages, including over 150 illustrations—S. C. Toof & Co., Publishers, 195 Madison Avenue, Memphis, Tenn.—$1.00 postpaid.

This book has been prepared for use by fire department officers who are confronted with the problem of organizing and training private fire brigades within industrial plants, storage warehouses and other large buildings during the war emergency.

Its purpose is to provide the instructor with a comprehensive illustrated outline that will help him form and train private brigades in the methods and practices of the public fire department, and thus furnish maximum fire protection to all business and industrial establishments participating.

Captain Klinck includes in his text book material on how to set up a fire brigade program, the fireman's personal equipment, knots used in the fire service, fire extinguishers, small tools and equipment, forcible entry, ventilation, ladders, hose, fire pumps, standpipes, sprinkler systems, private fire alarm systems, plant inspection, the fire brigade, evacuation of the plant, emergency communications, zoning industrial areas, sabotage, defense against bombs and gas, rescue work and salvage operations.

Date of Safety Congress Changed

The date and location of the Thirty-first National Safety Congress and Exposition have been changed because the government has taken over for military purposes the Stevens and Congress Hotels in Chicago, where the Congress originally was to have been held.

The 1942 Congress will be held October 27, 28 and 29. It will be housed in three big Chicago hotels—the Sherman, the La Salle and the Morrison. Convention headquarters will be in the Sherman.

Conserve

MANPOWER

Do your bit in the national emergency by protecting firemen and citizens from unnecessary asphyxial death from gas, smoke suffocation or other cause. Let us demonstrate the standard and military models of the Emerson Resuscitator and the big role they are playing in conserving manpower.

THE EMERSON RESUSCITATOR

J. H. EMERSON COMPANY

22 Cottage Park Avenue
Cambridge, Mass.

Representatives in Principal Cities

Convention Dates

Sept. 15-16—IOWA FIREMEN'S ASSOCIATION. Annual meeting. Tipton, Ia. Secretary, H. C. Reinholdt, Manning, Ia.

Sept. 18-19—NEW JERSEY STATE FIREMEN'S ASSOCIATION. Annual meeting. Meeting place to be decided upon. Secretary, Evan F. Benners, Room 602, 24 Brandford Place, Newark, N. J.

Sept. 21-22—TEMISKAMING FIREMEN'S ASSOCIATION. Annual meeting. New Liskeard, Ont. Secretary, F. E. Thompson, Box 686, New Liskeard, Ont.

Sept. 21-24—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual meeting. Fresno, Cal. Secretary, Harry E. Strasser, 2046 Oregon Avenue, Long Beach, Cal.

Sept. 23-25—INDIANA STATE FIRE CHIEFS' STATE DEFENSE CONFERENCE. Evansville, Ind. Bus. Mgr., Frank L. Orr, P. O. Box 984, Indianapolis, Ind.

October — ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual meeting. Fayetteville, Ark. Secretary, H. D. Compton, Central Fire Station, Little Rock, Ark.

Oct. 5-8—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION, INC. 47th annual meeting. Atlantic City, N. J. Secretary, Irvin Shulsinger, 8 East 41st St., New York.

Oct. 6-8—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. Annual meeting. Allentown, Pa. Secretary, Charles E. Clark, Wayne, Pa.

Oct. 13-15—ILLINOIS FIREMEN'S ASSOCIATION. 55th annual meeting. Jacksonville, Ill. Secretary, Chief Roy W. Alsip, Champaign.

City Without Protection as Fire Trucks Crash

Las Vegas, Nev., a boom town because of war defense work and nearby Boulder Dam, recently was without fire protection of its own for several days when the city's two big trucks were wrecked as they collided while racing to a fire.

The situation was a serious one because the city has mushroomed with thousands of workers living in shacks, tents, hastily constructed houses and trailers.

The fire truck at North Las Vegas, a small one, was brought in to stand by and officials at the basic magnesium plant located near Las Vegas promised that they would supply help from their own department in event of necessity.

Meanwhile, officials of the city sought priority ratings to secure new equipment. They also were scouring the country for used apparatus which would act as a stopgap.

The two trucks left the one station by separate routes and one crashed broadside into the other at a street intersection, damaging both beyond repair.

There are no cities of any size near enough to lend aid quickly in event of fire and citizens were warned to marshal all their garden hose, buckets and other fire fighting equipment for an emergency.

BOB GREENOCK

Clinton Fireman Joins Armed Forces

Fireman Walter A. "Sonny" Meyer of the Clinton, Ia., Fire Department was recently inducted into the army in the civilian pilot training branch of the Department of Commerce for thirty days' training as a flier, after which he hopes to be appointed as a flight instructor for the army. He has been a member of the Fire Department since 1935.

A BADGE
to be proud of
NOW
more than ever
BEFORE!

For the past 60 years we have supplied the fire fighters of America with the finest badges they have ever worn.

Now — because of the government's prohibition of the use of nickel, brass, copper, nickel plating, and chromium — we are making these badges and insignia in sterling silver, sterling silver gold plated, rolled gold on sterling silver, and 14 karat gold.

Today — for just a little more, you get a sterling silver Braxmar Badge — without doubt the best badge you can buy anywhere.

Recommend Braxmar to all your fellow fire fighters and wear one yourself.

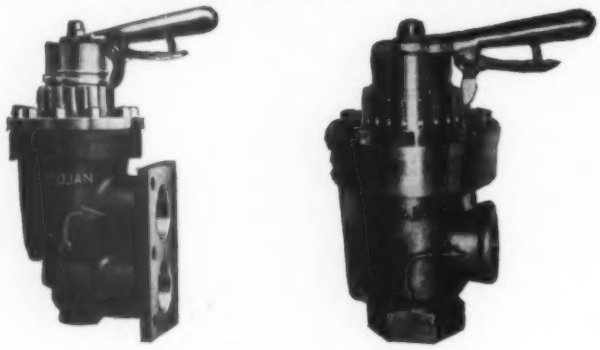
The blue covered catalog is the latest published but write for our new price list. Only prices in the catalog on 14 karat gold items are still in effect. All auto plates are discontinued for the duration.

C. G. Braxmar Co., 242 W. 55th St., N. Y.

BRAXMAR BADGES

Standard for over 60 years

ROSS RELIEF VALVE *on* TRAILER PUMPS



Sizes: 1 inch to 1½ inches
Pressure Adjustments: 10 to 250 lbs.
50 to 750 lbs.

Capacity: 0 to 250 G.P.M.
at 120 lbs. 0 to 500 G.P.M.

ROSS VALVE MANUFACTURING CO., INC.
TROY, N. Y.

"The Superior"
A MODERN *and* PROVEN
LIFE NET

The SUPERIOR LIFE SAVING NET is stronger than any other, because of the tested breaking strength of 1,800 lbs. of each individual rope.

The direct pull shock absorber system eliminates all friction and its greater resiliency provides for a safer, easier landing.

Made of Chrome Molybdenum steel, the frame may easily be folded for storage within a few seconds.

For the utmost in LIFE SAVING VALUE . . . "SPECIFY SUPERIOR".

For ECONOMY, have your old net converted into a "SUPERIOR".

Other SUPERIOR Products:
Training Nets and Structures
Ladder Belts
Life Size Training Dummies

William Moeller
Designer Consultant

SUPERIOR FIRE EQUIPMENT CORP.
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JANESVILLE QUALITY FIRE COATS

Our coats are giving excellent satisfaction in most of the large fire departments throughout the U. S. and
THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY
Rubber and Duck Coats and Bunkers, Boots, etc.
We also manufacture White Striped Safety Coats.
JANESVILLE APPAREL CO.
JANESVILLE, WIS.

California Threatened With Severe Fire Problem

Recently, Kenneth I. Fulton, Director of Natural Resources for the State of California, sounded the warning that "Unquestionably the war confronts California with the toughest fire suppression problem to be found in the United States."

There is nothing secret about the fact that city, state and county officials are tremendously worried about the coming fire season. The fire fighting forces of California are competent, operate efficiently and are well organized to cope with peacetime fire problems. The war has not only doubled the problems but complicated them as well. These forces are trying to raise their defenses to the new heights required by war but they are encountering great difficulties in so doing.

For more than four months the State Division of Forestry has been trying to buy additional firefighting equipment. I tried to get U. S. Army type four- and six-wheel drive trucks and trailers. They couldn't be had. The Division has been trying to get 200 or more of the smaller trucks but priorities have held them up so that few have been obtained.

The extraordinary nature and urgency of the problem stems from several facts. One is the inseparable relationship of watershed to water supplies. Practically all large urban and industrial areas are directly dependent on protecting forest and other watershed lands from the erosion which invariably follows fire. This is true of San Diego, Los Angeles, the cantonment areas, and the entire San Francisco Bay Area. Everyone knows of the airplane plants, the shipyards, the other war plants and industries housed in these metropolitan areas.

Another fact is that the large areas of exposure have a very high value.

These areas include, in addition to urban areas and the National Forests and Parks, some 50 million acres of forests, watershed, and the most highly productive agricultural land in the country; all of the utmost necessity to health, welfare and safety, as well as to economy and defense.

Another point is the high value of the risk. This year those high values include nearly a billion dollars of agriculture products; a billion-dollar forest and lumbering industry; a billion-dollar oil industry; a billion-dollar airplane industry; a very large shipbuilding industry and miscellaneous industries producing at least a billion dollars annually.

The large number of military objectives complicates the situation. These include, in addition to cantonments, fortifications and fortified areas, the two most important Pacific Coast ports; the most prolific and dependable sources on the Pacific of oil and its products; the country's largest aggregation of war industries as measured by contracts awarded; a high percentage of the country's remaining and readily available commercial timber; and railroad and electric power utilities.

Another fact that must be reckoned with is that the great majority of the areas, values and objectives are in what has been designated as "combat zone." The high vulnerability of these values and objectives to saboteur-set fires is most apparent. For example: Most industries are concentrated in small areas, a hazard inherent in the nature and dis-

tribution of the water supplies; much of the electric power is produced at long distances from points of use as are city water supplies; rail hauls are long, increasing the difficulty of adequate protection.

As Fulton puts it, "Hundreds of fires could be set going simultaneously in our forests, brush and grain lands and oil fields very easily by a mere handful of determined enemies traveling through the State scattering incendiary materials."

BOB GREENOCK.

Delay in Manufacture of Stirrup Pumps

Army and Navy demands for the total production of the plastic, polyvinl-butyral, may result in an indefinite delay in the production of stirrup pumps, James M. Landis, OCD Director announced recently.

When the Office of Civilian Defense found in May that rubber hose could not be used, polyvinl-butyral hose was developed by several companies as a substitute at the request of the OCD. The military authorities have requisitioned the entire supply because of its usefulness in many forms of waterproof garments and containers.

Bids on 2,258,000 pumps and 22,580,000 feet of hose had been opened and the Defense Supplies Corporation was ready to let contracts when the OCD was informed that the priority for hose previously assured them had been denied.

Presently estimated production of polyvinl-butyral for the remainder of the year is less than the total Army and Navy requirements. It is possible, OCD officials said, that some of this material may be found in forms which cannot be processed as hose. All possible effort is being expended in this direction, but there is no indication that an adequate supply exists.

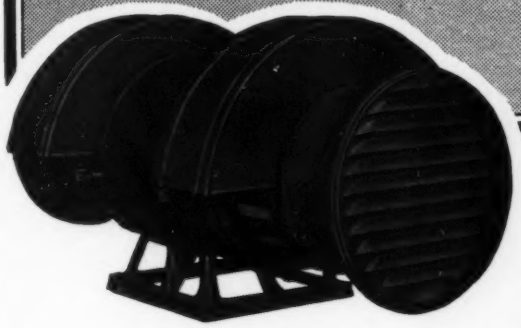
Production of pump tank extinguishers, portable four-gallon containers with pumps enclosed, is not presently affected by shortages. Material previously was released by WPB to manufacture 2,258,000 of these. Four of these are to be distributed to each city block in target areas, but they will be government property in the custody of authorized civilian defense workers. The stirrup pumps, which would double the number of manual fire fighting units, were designed for distribution or sale, under government regulation, to private citizens in target areas.

Hoarded Gasoline Results in Death of Fireman

One fireman is dead, and twelve others injured, as the result of being trapped in a blast of hoarded gasoline in a Baltimore dwelling. The occupant has been presented to the grand jury on a charge of unlawful storage of gasoline. Four fifty gallon drums were removed from the basement after the blast.

Among the thirteen firemen injured was the entire shift of No. 43 Engine, with the exception of the driver who returned to quarters alone. Fireman Eugene Kernan of Engine 43 died of his injuries a few days later. Fireman Theodore Berry of Engine 43 suffered serious burns about his face. Most of the other firemen were injured when an

BE PREPARED NOW for LATER!



STERLING MODEL "M" GENERAL ALARM SIREN

You Can Depend On It *ALWAYS*

These are days of positive action. Now is the time to prepare for future eventualities, whether they be "Fire Alarms" or "Air Raids." Give your community the best possible protection you can. . . . Give it "Sterling Protection." Sterling Sirens are always ready for emergencies day or night. In the regulated, shrill vibrations of the STERLING SIREN ALARM you have the answer to both the fire alarm and air raid housed in one piece of equipment.

Oldest and Largest Exclusive Makers of Siren Signals

STERLING SIREN FIRE ALARM CO., Inc.
55 Allen Street Rochester, New York

Specify HALE

Hale pumping units, like Hale Fire Pumps, are known for consistent reliable performance.

Pioneered in 1936, used throughout the world, the Hale 500 GPM pumping unit sets new high standards of performance.

Write today for the Catalog and Folders on the complete line of Hale Pumps.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

SEE HOW NICE IT FITS..!
ONE PIECE
ONE MOVE
and Your Face Is
COMPLETELY COVERED!

Cases No. 605

HEALTHGUARD MASK

★ You can see by the above illustration how snugly the Healthguard Mask fits your face.

This mask may be worn for protection from wood smoke and numerous acid fumes and gases, by simply changing from one cartridge to another. Not a single dissatisfied user among hundreds now wearing this Healthguard Mask. Comes packed in a neat metal carrying case.

Get Circular, Prices and Full Details — Write

CHICAGO EYE SHIELD COMPANY
2309 Warren Boulevard, Chicago, Ill.

WHEN YOU BUY
from
BOYER
You Get the best for less!
★
Headquarters for
FIRE APPARATUS and FIRE DEPARTMENT SUPPLIES
★
BOYER FIRE APPARATUS CO.
LOGANSPORT IND.

explosion blew up the first floor of the house while they were standing on it.

The four first alarm companies had responded to a box alarm and had no warning of the presence of gasoline in the basement of the dwelling. The first blast was the smaller of the two, and sent out a burst of flame as some of the gasoline ignited. There was a general rush into the house to rescue several firemen who had been caught in this first blast and badly burned. A few minutes later a second and more violent blast took place. This blast was so violent that it actually blew out the fire, as no more smoke or flame was observed.

The entire first floor flooring of the house was ripped out by the second blast and the furniture sent crashing through the ceiling of the first floor. Window and door frames were ripped out by the blast and the walls were left in an unsafe condition.

A second alarm was sounded after the first explosion but the fire was out when the additional companies arrived. Four Fire Dept. ambulances were used to transport the injured to hospitals. Had this fire occurred during the evening it would have caught some Auxiliary Firemen, as these civilian volunteers ride the regular apparatus nightly from 7:30 to 9:30, to acquire practical experience. Some of them would most certainly have been on the line in the basement when the first of the two explosions took place.

Since the above explosion two other men have been arrested for unlawful storage of gasoline. One man had a large quantity stored in a commission house, in a district where a fire from ordinary causes often results in an additional alarm. The other man had two five gallon tins of gas stored in a congested neighborhood.

OTIS SMITH.

A New Name for an Old Evil

The California State Council of Defense recently announced that it holds no brief for "goofers."

It then went on to explain that a "goofer" is a motorist who races the fire engines to the scene of a fire.

"The great American custom of beating fire engines to the fire must be curbed for the duration," said the Council, reminding Californians that they "should stay away from the scene of any unusual military activity, and particularly during enemy action."

Beating the fire engine to the fire or having a front line seat at any other accident has long been a traditional American pastime, the warning stated, pointing out that it is one tendency which should be sidetracked for the duration.

"During an enemy attack, more curious goofers will be victims of shrapnel and falling debris than will be killed or hurt by enemy bombs or shrapnel. Don't be a goofer," the council warned.

BOB GREENOCK.

Captain Moulton Promoted to Assistant Chief

Captain Roy S. Moulton of the Kansas City, Kan., Fire Department has recently been promoted to Assistant Chief in charge of the Fire Prevention Bureau. He is also Chief of the Air Raid Wardens Division of the civilian defense program of that city.

ELK HART IND

A PARTIAL LIST OF ELKHART PRODUCTS

Shut-Off Nozzles
Controlling Nozzles
Turret Pipes
Fire Department Extinguishers
Extinguisher Holders
Fire Truck Body Fittings
Hose House Equipment
All Types of Hose Couplings
Sliding Poles, Railings and Canopies
Fog Nozzles
Hose Test Pumps
Threading Tools
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Pump and Hydrant Valves
Hose Racks and Cabinets
Siamese Connections
Underwriters' Industrial Extinguishers

38 years' service in the fire field
•
Prompt service - Quality products
•
Send for illustrated folder on the New Elkhart Mystery Nozzle.

ELKHART BRASS MFG. CO.
ELKHART, INDIANA

"ALL AMERICAN CHOICE"
INVINCIBLE NOZZLES
PREPARE — PROTECT
Portable equipment is the watchword of today.
Buy—
INVINCIBLE NOZZLES
and enjoy the benefits derived by experience of the pioneers in the nozzle field.

Fig. 403

F. N. McINTIRE BRASS WORKS
Successors to A. J. Morse & Son, Inc.
BOSTON, MASS.
1837 - - 1941

SEALAND TRAILER PUMPS

These mobile trailers made in 150, 250 and 500 gallon units are powered with gasoline motors, carry 500 ft. of double jacket Fire hose, and may be equipped with 100 gallon booster tanks. Skid mounted units can be furnished. Pumps can be purchased without trailers.

THE SEALAND CORP.

Centrifugal Pumps—Fire Alarm Systems—Modern Fire Apparatus

SAUGATUCK, CONN.

CANVAS GOODS

"DANDRY" SALVAGE COVERS

Prevent Water Damage

Thoroughly impregnated by a triple chemical process, and sturdily built, they are light and easily handled. Unlike ordinary covers, "Dandry" Salvage Covers will remain soft and pliable, will not freeze or crack, even at very low temperatures, or become greasy and sticky when subjected to extreme heat.

The choice of leading Fire Departments and Civilian Defense organizations, "Dandry" Salvage Covers will also serve *you* better.

C.R.DANIELS, INC.

Manufacturers of Everything of Canvas

101 CROSBY ST. • NEW YORK, N.Y.

Newark • Boston • Buffalo • Chicago • Cleveland • Detroit Milwaukee • Philadelphia • Pittsburgh • Alberton, Md

The Watch Desk

(*Continued from page* 579)

being so hot in Huntington that it started two fires, one in a paint shop, where a barrel of rags behind a plate glass window caught fire, and the other in an automobile where a crystal ball lying on the seat focussed the sun's rays. What we'd really like to know is whatenell the 'crystal ball' was doing on the auto seat!

* * *

They Still Do It!

Edward F. Lacasse, 30-year old volunteer firemen, arrested in May after a series of forest fires in Rhode Island and Eastern Connecticut causing $3,000,000 damage, was sentenced to 7 to 15 years in prison on arson charges not connected with the woodland blazes but because he pleaded guilty to setting fires that destroyed a combination grain house and railroad station and two barns with a loss of nearly $65,000. Write your own caption!

* * *

Gas—and Luck—Run Low!

Frank Leo, who runs a filling station in Oradell (N. J.) thought luck was coming his way when a gasoline truck, for which he'd been waiting ten days, pulled in at his filling station to give him the long looked-for supply. The hose-line had just been connected to Leo's tanks when an electric cable over the station began to crackle from a short circuit and set the roof afire. The gasoline truck pulled its freight in a hurry and when last seen by Leo was racing a cloud of dust down the road. Instead of *its* return, the Oradell Fire Department arrived —in time to extinguish the blaze before it could do serious damage.

"I s'pose I'm lucky after all" said Leo, ruefully. *"The whole darn place might a blown up"!* According to last reports Leo was still looking hopefully up the road for the gas' truck.

* * *

Boys 'll Be Boys!

In Philadelphia a group of boys turned control valve on broken fire hydrant ('plug' sez the clipping). Well, a 5-ft. geyser flooded the street intersection, marooned a gasoline station, cut water supply from nearby homes overnight and caused ice cream plant to suspend operations for nearly a day, in addition to giving firemen hebejeebies over the increased fire hazard.

* * *

Backfire!

The Vamps of Odin (Ill.) bought a new pumper and proudly invited citizens down t' the coal mine pond to see how she was gonna work. While the crowd cheered, the pumper shot a stream of water high into the air. But, alas, sparks from the motor exhaust ignited dry leaves on ground and quicker'n scat, flames enveloped the new truck. Sadly the Vamps sent the job back to St. Louis for repairs and repainting! S'tough, Brothers!

* * *

Lincoln Took a Chance!

Two 13-year old junior Red Cross safety inspectors of Springfield (Ill.)—Margaret Copp and Billy Horin—found a fire hazard in Abraham Lincoln's home (near Springfield). After inspecting house, furnished almost exactly as it was in Lincoln's time, Billy announced *"Everything else about the house is all right, but Mr. Lincoln was sure running a risk not having a screen in front of his fireplace"!*

Regular firemen instruct a Volunteer Brigade in the use of INDIANS for Civilian Defense Work. Put your trust in these back pack pumps for fighting fires. Recommend them to those for whose fire protection you are responsible.

INSTRUCT AUXILIARY FIREMEN IN THE USE OF

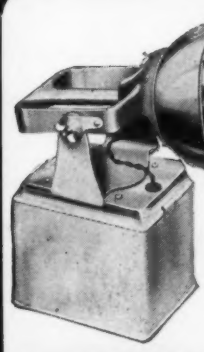
INDIAN FIRE PUMPS

Your new equipment dollar goes further when it is invested in INDIANS. The fact that they require only clear water is a marked economy. Let us send you testimonials from fire depts. all over the country—*these letters of endorsement are our most convincing advertisement.*

D. B. SMITH & CO.

406 MAIN ST. UTICA, N. Y.

One of 70



TYPE WS

MASTER ★ LIGHTS

EMERGENCY LIGHTS

for

FIRE CHIEFS

•

Notice the perfect balance with beam turned up or down. Use rechargeable batteries now.

•

A MASTER-LIGHT FOR EVERY NEED

•

CARPENTER MFG. CO.

"MASTER ★ LIGHT ★ MAKERS"

200 Sidney St. Cambridge, Mass.

The "ALL-OUT" EXTINGUISHER

has accomplished the following feats:

1. Extinguished a 12'x12' oil pit fire. (15 seconds)
2. Covered above pit fire with film preventing reflash.
3. Extinguished running gasoline fire more than 6 times. (same extinguisher)
4. Extinguished calcium carbide (acetylene gas) pit 18"x18"x18". (10 seconds)
5. Extinguished magnesium bomb assisted by magna hood.
6. Extinguished magnesium scrap assisted by magna hood.

In addition, the "All-Out" Extinguisher is a non-conductor of electricity and a non-abrasive. (Harmless to machinery.)

Has a range of more than 25 feet and contains no dangerous gases.

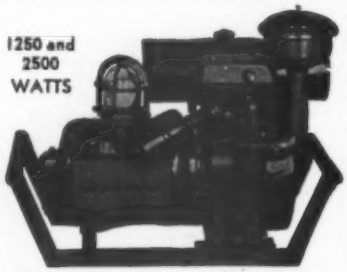
Can your present extinguisher duplicate the above feats? If not, why not investigate "All-Out"?

Distributors Wanted Immediate Delivery

NATIONAL POWDER EXTINGUISHER CORPORATION
880 BERGEN AVE. JERSEY CITY, N. J.

"U.S." PORTABLE LIGHT PLANTS

1250 and 2500 WATTS



This 1250 watt, portable unit has been designed expressly for fire department use. It is small, light, compact and equipped with carriers for easy portability out on the job. Air-cooled 4-cycle engine 2⅝" bore x 2⅝" stroke. 2.4 H.P. 2 gallon fuel tank. Quick starting. Also 2500 watt size.

LARGER SIZES AVAILABLE

Write for Catalog.

UNITED STATES MOTORS CORP.
430 Nebraska Street, Oshkosh, Wis.

One for the Truck House Lawyers

Here's a quiz question that had'em guessing not so long ago. It had to do with fireman Wm. H. Keller of the Los Angeles (Calif.) F.D. It seems he was on leave to recuperate from an injury suffered on duty and he indulged in a baseball game, in which, sad to say, he broke his leg.

The question was, did he break his leg in line of duty? Was he entitled to continue his leave of absence on pay?

Despite much argument to the contrary, the L. A. City Attorney, Ray Cheseboro, ruled "Yes" to both questions. The reason:

The fire commission suggested a year ago that firemen whenever possible, should engage in activities which keep them physically fit. Keller was doing just that, Cheseboro's opinion stated.

Stick this'un away in your file of "case histories" you Truck House lawyers—and thank you, Contrib' E. R.

* * *

Blessing in Disguise?

This fire was a Sherlock Holmes. At least it unearthed a crime. According to Contrib' J.W.C., Beverly Farms (Mass.), next time you get what seems like an exorbitant bill from the lighting company, think of John A. Hedin's bills. Hedin lives in an apartment in Watertown (Mass.) and one day there was a fire there. While fighting said fire, the firemen discovered someone had connected wires in an upper floor apartment in such a way that the electricity registered on Hedin's meter! According to firemen, the work was done 15 years before the fire and Hedin had been paying the extra charges ever since. Would you say this fire was caused by "detecative" wiring?

Chief Collins Dies

Fire Chief Daniel P. Collins of the Elmira, New York, Fire Department died suddenly on August 18 from a heart attack.

Chief Collins joined the Fire Department on January 14, 1905. He was appointed lieutenant on August 3, 1922, and captain on October 15, 1925. His next promotion was to deputy chief on March 1, 1928. On the death of Chief John H. Espey on March 3, 1937, he was appointed as acting chief, and became chief on November 15, 1937.

During his tenure as chief, the department improved materially with the remodelling of all stations and additions to the equipment of a large aerial truck, three pumpers and a rescue boat. He was also instrumental in bringing about better working conditions for the firemen. Several months ago under a state law the working hours were cut from eighty-four to seventy-two, bringing more leisure time for the firemen and bringing an increase in the department personnel from seventy-four to eighty.

Chief Collins served as a director of the New York State Fire Chiefs Association and a member of the International Association of Fire Chiefs.

Smith Treasurer of New England Control

Paul S. Smith, Treasurer of the Rockwood Sprinkler Company, has been elected Treasurer of the New England Control of the Controllers Institute of America.

Keep Your Batteries ON THE ALERT

WITH A TUNGAR TWO-RATE CHARGER

FOR 40-AMP. CHARGING OF 6-VOLT OR 12-VOLT BATTERIES

Model 6RB84B5 Charger

The Tungar Two-Rate Charger will completely recharge a run-down battery quickly and safely. Sizes are available for 6- and 12-volt batteries. The initial high-rate charge of 40 amperes automatically drops to a low finishing rate of 16 amperes for the last 20 per cent of the charge, then automatically cuts off.

Portable—can be easily moved to any desired location. Compact—requires less than one square foot of floor space. Complete—furnished with long D-c. leads and clips, a long A-c. lead which plugs into any convenience outlet of the proper rating, and two 99X45 Tungar Bulbs.

For more information, just write Section A-924-58, Appliance and Merchandise Dept., General Electric Co., Bridgeport, Conn.

GENERAL ELECTRIC

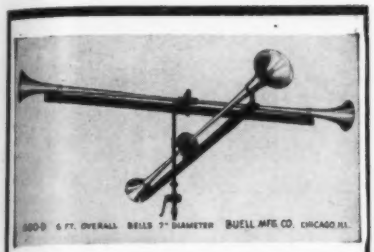
QUAKER FIRE HOSE

CHEMICAL • FORESTRY • SUCTION HOSE

QUAKER QUALITY SINCE 1885

QUAKER RUBBER CORPORATION
Main Office & Factory: PHILADELPHIA
NEW YORK • CHICAGO • HOUSTON

Western Territory
QUAKER PACIFIC RUBBER COMPANY
SAN FRANCISCO • LOS ANGELES



BUELL AIR RAID WARNING SIGNALS

BUELL Air Raid Warning Signals use the most simple and effective sound-producing principle known today, a patented BUELL feature. They transfer air energy directly into sound, giving a powerful, dependable warning of high attention-getting value. 50 units of the 600-D type shown above have been installed in Portland, Oregon . . . 10 suburbs of Chicago have installed this unit.

Buell Air Pressure Warning Signals can be used for alarms and special purpose signaling in industrial plants, ship yards, etc. Ideal for coding to call volunteer fire departments.

Write or wire for descriptive literature, NOW!

BUELL MFG. CO.
2995 Cottage Grove Ave., Chicago

For CIVILIAN DEFENSE

VALVES HYDRANTS

Experience indicates that more damage is done in an enemy air raid by incendiary bombs than by demolition bombs. City officials and water works operators are striving for maximum fire protection by increased installation of high quality and dependable fire-hydrants and valves.

M&H VALVE AND FITTINGS COMPANY
ANNISTON, ALABAMA

The Round Table

(*Continued from page* 581)

are still permitted the use of bells and the oscilating light.

I feel that alternate signals are satisfactory because the record of accidents as compiled by the Fire Department Repair Shops indicate that, for the first seven months of 1941, there were twenty-four accidents as against twelve accidents in 1942 for the same period

As a final remark, I would state that when I used to apply the sirens, my experience was that nine times out of ten my driver would apply the gas irrespective of driving conditions. It is just a case of becoming adapted to present conditions.

* * *

The following replies are in answer to a previous question on regulating the storage and handling of gasoline.

E. N. Whitaker, Chief, Tacoma, Wash.: The attached release was published in the daily papers of Tacoma and in "The Labor Advocate", the "Civil Service Bulletin" and other weekly papers. "The Labor Advocate" printed some twenty thousand copies and distributed them among the various factories, shipyards, etc.

"Fire Chief Emory Whitaker, has issued the following warning concerning the storing of flammable liquids (gasoline) above ground in the City of Tacoma. He points out the dangers of handling and storing gasoline above ground would fill a book so the Chief just wants to bring out one point. Suppose every resident of the city stored five gallons of gasoline on his property and we suffered an air raid. Just think of the torches that would be ignited, lighting up the entire city plus the incendiary value of the gasoline in starting fires all over the city. Every time you store gasoline above ground the Chief says, you are planting a bomb that could easily be ignited and spell ruin to your home. In addition to burning, one gallon of gasoline has the same potential explosive power as eighty sticks of dynamite when properly vaporized with air.

"There is an ordinance in effect in the city of Tacoma covering the storage of flammable liquids and quoted is a portion of Section 3 and Section 19. 'It shall be unlawful for any person, firm or corporation to keep or store above ground and/or underground any Class I and/or Class II flammable liquids without first obtaining a written permit from the Fire Marshal so to do. Said permit shall specify the name of the permittee, the location of the premises where said flammable liquid is to be stored and the amount thereof.'

"Section 19 of the Code states the penalty to be imposed upon those violating the regulation. 'It shall be unlawful for any person, firm or corporation to fail, neglect or refuse to comply with any provisions or requirements of this ordinance, or any lawful order or direction of the Fire Marshal made pursuant thereto; and any person, firm or corporation violating any of the provisions of this ordinance or failing, neglecting or refusing to comply with the terms

THE *New* WHEAT *Rechargeable Spotlight*

MODEL 158

2500 FOOT BEAM
25000 CANDLE POWER
1000 HOURS OPERATION

Critical Materials Reduced to a Minimum to insure Availability

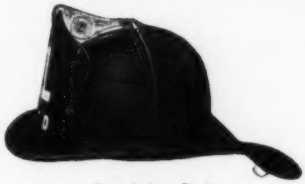
FEATURES

★ Positive "non-spill" Construction
★ Less expensive Operation than dry cells
★ Free use of Hands. Light carries conveniently on Shoulder Strap
★ Weighs only 92 ozs. complete
★ Simple to Charge and Water No need to take Lamp apart
★ Light can be Focused and Directed as Desired

WRITE FOR COMPLETE DETAILS

KOEHLER MANUFACTURING COMPANY, INC.
MARLBORO, MASSACHUSETTS, U.S.A.

CAIRNS



Regulation Style

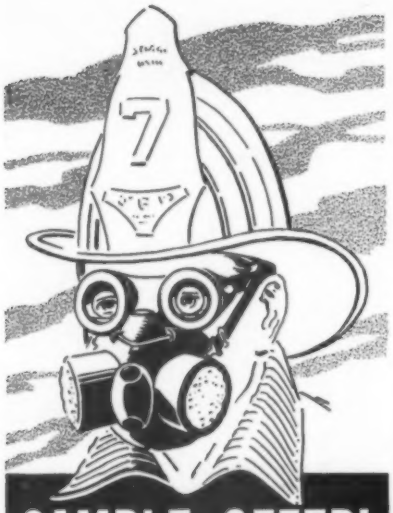
SOLID TOP, LEATHER HELMETS

employ no critical materials, so are available promptly in two weights and in the two styles shown, with safety "cushion lining" that absorbs shocks.

Drop Brim Style

Write for Catalog 30A

CAIRNS & BROTHER
Outfitters to Firemen Since 1836
444 LAFAYETTE STREET - NEW YORK



SAMPLE OFFER!
New DUPOR No. 20, Double Sponge Smoke Mask ($24 doz.)
and famous
"Nod & Shake", Fog-Proof RUBBER GOGGLES ($18 doz.)
1 Sample of Each Sent
H. S. COVER
68 CHIPPEWA ST
SOUTH BEND, INDIANA
$3.50 POST PAID

and requirements made pursuant thereto shall be fined in any sum not exceeding three hundred dollars or imprisoned in the City Jail for a term not exceeding ninety days, or may be both so fined and imprisoned. Each day of violation of this ordinance shall constitute a separate offense.'

"Please cooperate with your fire department in keeping your city as safe as possible."

James J. Evans, Chief, Everett, Mass.: The public should be notified that the storing of gasoline will not be tolerated unless it is stored in approved containers and a permit for same procured from the Chief of the Fire Department.

The State of Massachusetts has legislation controlling the hazards of unsafe storage of gasoline around homes or places of business.

S. T. Porter, Chief, Washington, D. C.: Regulations similar to those of the National Board of Fire Underwriters are in force and cover the storage and use of gasoline in the District of Columbia. We believe these to be adequate.

John C. McNally, Chief, Somerville, Mass.: To prevent the storage of gasoline illegally, I would post notices in all filling stations, in all local papers and have a motion picture trailer made up and shown on the screen. I would also instruct fire prevention inspectors to interview owners or occupants to see how much gasoline is stored and to inform them of the laws governing the storage and use of gasoline.

Fred P. Higgins, Chief, Grand Rapids, Mich.: Ten gallons is the most we allow above ground. This is regulated by an ordinance.

Charles L. Slade, Chief, Des Moines, Ia.: We have in force the National Board's Fire Prevention Ordinance which permits only such storage as is safe. I believe the members of the Fire Prevention Bureau and the officers of the department will have to be on the alert more than usual for excessive storage of prohibited flammables and also for other materials during the present emergency.

William J. Mohr, Chief, Santa Monica, Cal.: We have a very strict law governing the storage of gasoline. All must be stored underground.

Frank Pulaski, Chief, Boise, Ida.: Class 1 liquids must be stored in sealed containers or safety cans or not more than one gallon capacity and in an amount not exceeding ten gallons.

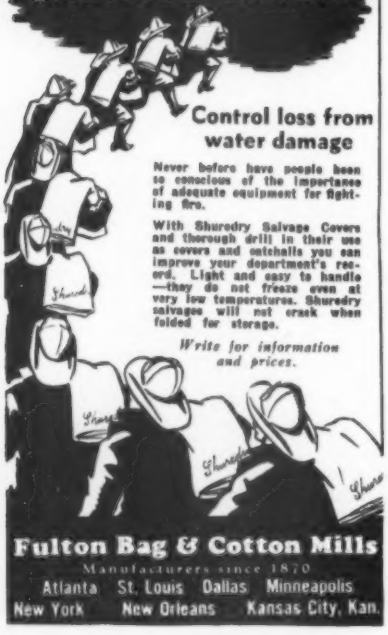
Harry Hutton, Chief, Salem, Ore.: All gasoline up to five gallons must be stored in safety cans. All above five gallons must be in underground tanks.

C. L. Ingram, Chief, Montgomery, Ala.: Our city code limits the quantity of gasoline that may be stored and specifies the kind of containers which may be used.

Carl J. Kiessling, Chief, Worcester, Mass.: The Massachusetts State Laws and the Rules and Regulations of the Massachusetts Department of Public Safety cover the sale, storage and transportation of gasoline and other inflammables adequately. In addition, the State Fire Marshal can and does delegate his authority to the Chief of the Fire Department of the several Massachusetts communities.

The legislation is State-wide and is enforced by the local authorities.

USE Shuredry SALVAGE COVERS



Control loss from water damage

Never before have people been so conscious of the importance of adequate equipment for fighting fire.

With Shuredry Salvage Covers and thorough drill in their use as covers and catchalls you can improve your department's record. Light and easy to handle—they do not freeze even at very low temperatures. Shuredry salvages will not crack when folded for storage.

Write for information and prices.

Fulton Bag & Cotton Mills
Manufacturers since 1870
Atlanta St. Louis Dallas Minneapolis
New York New Orleans Kansas City, Kan.

GUARDING AMERICA'S HOSE SUPPLY

CIRCUL-AIR HOSE DRYERS

Used extensively in Army, Navy, Marine Corps Arsenals, Air Stations, Ordnance Works; in Shipyards, Aviation, Chemical, Steel and Electrical Works; in Cities, Villages and Fire Districts from Maine to California, this Modern Dryer is doing a fine job of making America's Hose supply "Go Farther and Last Longer."

THE CIRCUL-AIR CORP.
303 DWIGHT BLDG. . . JACKSON, MICHIGAN

DIRE NEED

War conditions are making it impossible for fire departments in many cities, particularly in "non defense" communities to get the apparatus and equipment they so sorely need.

Your Opportunity

If your own department has any surplus apparatus or old equipment that could be used or rebuilt by those who need it more than you do, *offer it for sale* through the classified "Opportunities" columns of this publication. Rates only $5 per inch. Just address FIRE ENGINEERING, 24 W. 40th St., New York.

When You Specify Products Bearing.....

HOSE BRASS GOODS WB LINE THE WOOSTER BRASS Co. WOOSTER, OHIO

You can SAVE and BANK on SAFETY

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THE WOOSTER BRASS COMPANY
WOOSTER OHIO

IMPROVED INCENDIARY BOMB PUMP

Designed for extra sturdiness and maximum efficiency

The two cylinders provide constant quick pressure on both the up and down stroke. All working parts accurately machined, including the two-way slide type nozzle, for mist spray or straight spray.

Other type bomb pumps of larger size with containers complete also manufactured, as well as fire hose nozzles, wheels, plugs, caps, etc.

The CAMPBELL-HAUSFELD COMPANY
402 Railroad Avenue, Harrison, Ohio

John Luxembourger, Chief, Santa Ana, Calif.: To prevent the practice of illegally storing gasoline, I would recommend that strict rules and regulations be adopted.

We have an ordinance regulating the use, handling and storage of all inflammable liquids. All storage of gasoline must be underground, except in jobbers' plants. All jobber or distributing plants are required to have concrete dykes.

C. E. Ginther, Chief, Rochester, Minn.: We have had the National Board ordinance on inflammable liquids in force here for the last five years and believe we can handle the storage problem adequately.

William L. Ryan, Chief, Dubuque, Ia.: To prevent illegal storage of gasoline, I would require that all gasoline in excess of ten gallons be stored underground, and that from one to ten gallons stored above ground be kept in safety cans.

Legislation to enable us to control the hazards of unsafe storage of gasoline is pending.

A. J. Cote, Chief, Woonsocket, R. I.: I believe an ordinance regulating the storage of gasoline in small quantities should be in effect. We do not have such an ordinance.

D. P. Rachal, Chief, Port Arthur, Tex.: We have a city ordinance governing the storage of gasoline around homes or in places of business.

W. Leroy Hall, Chief, Sharon, Pa.: We have legislation governing the storage of all volatile inflammable liquids.

"No person, firm, association or corporation, keeping volatile inflammable liquid for sale or use, shall store or permit to be stored within any building used for other purposes, except when contained in safety containers or vapor-proof receptacles. Where safety containers or receptacles are used not more than five gallons shall be kept in any building, except as otherwise provided.

"All cans, drums, barrels, tanks or other receptacles holding or containing not over sixty gallons in which volatile inflammable liquid and kerosene is stored or handled, may be placed above ground (prohibited in fire zone) if stored in a separate noncombustible building or shelter, well ventilated at or near the floor, not exceeding one story in height, which shall be used exclusively for such storage, and be located from other buildings at a distance not less than the aggregate amount of liquid therein provided in the following table: 500 gallons or less, ten feet; 1,000 gallons or less, twenty feet; 8,000 gallons or less, twenty-five feet; 12,000 gallons or less, thirty feet.

Chief Lewis 64 Years with Fire Department

Chief George E. Lewis recently completed sixty-four years of service with the Newport, N. H., Fire Department, having been connected with the same since August 1, 1878.

Chief Lewis has also terminated fifty-three years as a member of the Board of Engineers of the Newport Fire Department, of which he has been Chief for thirty-two years. He is now also serving as Chief Air Raid Warden.

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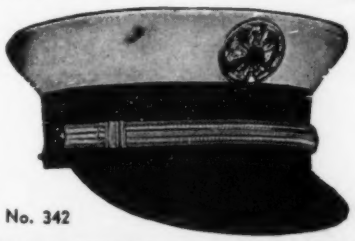

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"Adequate" lighting at the front line, or wherever electric service is not available, can often mean the difference between life and death. How vital then, are the portable "lighting" units, powered by Briggs & Stratton 4-cycle, air-cooled gasoline motors, used by our armed forces. Their trouble-free performance affords dependable power wherever and whenever needed.

Our entire resources are now devoted to supplying Briggs & Stratton gasoline motors, to those whose equipment serves the war program, or is for "essential" civilian uses.

If you're now planning post-war production of gasoline powered appliances and equipment, or if your products fit these classifications, write us and we'll serve you as best we can.

Meanwhile Briggs & Stratton motors (⅔ to 6 H.P.) now in civilian use, continue to set new records for trouble-free performance and long life. With reasonable care, their service can be still further prolonged.

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SEPTEMBER, 1942

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BRAINTREE, MASS. 65 FT.

WINTHROP, MASS. 65 FT.

GREENVILLE, N.C. 55 FT.

ORDNANCE PLANT 50 FT.

U.S. NAVY 75 FT.

Here are a few of the many Pirsch aerial ladder trucks delivered this year, and more are on the way.

Some are repeat orders: Memphis now has 4 and Cambridge 3 Pirsch aerials.

Performance does count.

GAINESVILLE, FLA. 65 FT.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

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TRADE NAME, FOG NOZZLE COMPANY OF LOS ANGELES

4AF for
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$37.50 and $45.00

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LEADER TIP
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for 1" & 4AF's
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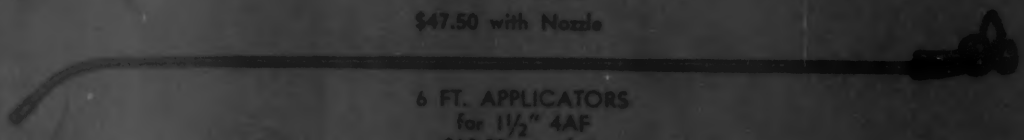
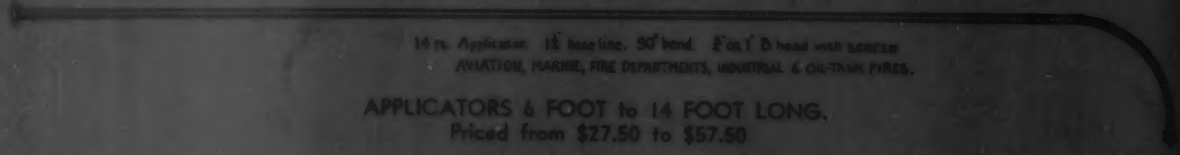


6 FT. APPLICATORS
for 1½" 4AF
$60.00 complete
with Nozzle



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